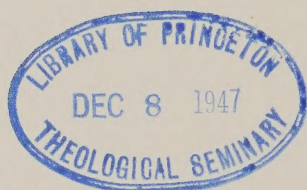



*Growth and
Learning*

IN THE
ELEMENTARY
SCHOOL





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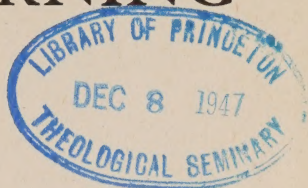
*Psychological Foundations of Instruction and
Practice in the Elementary School*

ALBERT J. HUGGETT CECIL V. MILLARD
MICHIGAN STATE COLLEGE



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PREFACE

COURSES CALLED "Psychology of the Elementary School Subjects" have for a long time been designed to present the results of research on problems related to various aspects of method, instruction, and curriculum. The organization of such materials has been in the main by a subject matter classification. Although keeping to the same general theme, the present writers have provided a somewhat different content and consequently a somewhat different organization.

The teacher in the elementary school is beginning to break the bonds of regimentation imposed by a prescribed course of study. Setting aside her traditional role as prescriber of tasks and hearer of lessons, she is becoming more and more a coordinator of learning experiences. As a result, in numerous elementary schools the many subject divisions have given way to consolidations sometimes called "core" courses. Thus it appears that teaching is moving in the direction of the development of techniques for realizing general goals rather than for realizing subject-matter goals only. Instead of teaching "slices" of subject matter, teachers are now developing "unit" or "broad" organizations of material covering several subject-matter fields. Eventually the piecemeal type of organization may be entirely abandoned.

The older program required of the teacher a well-grounded knowledge of subject matter; the newer program makes much greater demands. As far as content is concerned, the teacher must guide in the coordination and selection of the subject matter that is to be taught. The old step-by-step sequence is apparently failing to meet the demands of the new diversified teaching situations. Outside of subject-matter requirements the newer program demands a knowledge of children that was not considered too important a few years ago. Knowledge of child growth, information about children's interests, training in how to guide the development of personalities, and schooling in ways of furthering the

social development of children are all requisites for the elementary school teacher. Consequently the problem of selection of material for such a book as this is much more complex than presentation of research results under subject-matter headings.

The present writers, like certain others, look upon educational psychology in a little different light than was formerly the custom. Earlier writers have defined educational psychology as a "study of human problems," a "consideration of the growth of the individual," "problems of human behavior," "learning," and the like. Educational psychology is considered here as a tool by which teachers may discover the most efficient way to realize the accomplishment of educational goals. For all practical purposes it cannot be considered a field disconnected from goals in education, nor as a tool can it be considered separate from method. To determine a content, then, for such a book as this, it is essential that one know what the school — the elementary school — is trying to do. The organization of material, consequently, is based upon the authors' concept of what the elementary school is attempting, and the problems presented and discussed are those which grow out of the objectives of the elementary school as so conceived.

This book was written with the idea of bringing to the teacher of the elementary child a better understanding of that child, a knowledge of pertinent late research dealing with curricula for meeting the needs of that child, and a review of methodology designed to make effective reactions between child and curriculum. Such a teacher may be found in the large city school or in a one-room rural school. For the experienced teacher, trends and ways of moving toward those trends are projected. For the beginning or prospective teacher, developments in psychology and in methodology are included which will aid in orientation toward the demands of the job.

East Lansing, Michigan

A. J. HUGGETT
C. V. MILLARD

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Part I

STRUCTURE AND ORGANIZATION
FOR ELEMENTARY SCHOOL PRACTICES

I

The Philosophy and Objectives of the Elementary School

AS A SOCIAL institution the elementary school has experienced the vicissitudes and the changes in goals common to most of man's organizations.¹ At times the latter have undergone rapid transformation; at times they have drifted along in a pattern which has been constant for many years.

Within the scope of this book it is not possible to trace the totality of these changes in goals or to discuss those of any period in much detail. That the reader, though, may have a broad perspective of how the more important goals have come to be accepted and the effect they have had upon the elementary school, it seems essential to discuss briefly some of the more important ones and to indicate how they have reacted to changes in the social world.

I. THE ELEMENTARY SCHOOL TRADITION

Elementary education is relatively new. This fact may surprise the reader who is not familiar with the history of education. As a matter of fact, secondary education developed in Europe long before either the government or the church became interested in universal elementary education. The early Renaissance initiated the secondary school, and the humanistic educators who followed developed the academy as a preparatory training for the

¹ For a further statement on the rise of the elementary school, see CASWELL, HOLLIS L. *Education in the Elementary School*. New York: American Book Company, 1942.

university or, in some instances, as a rival of it. Students entering the academy had no elementary school training as such but had been privately tutored.

When elementary education did come, it had little or no relation to the secondary school. Since it was the result of revolutionary movements rather than a cultural development, it became an institution for the masses. Accordingly, elementary and secondary education existed for years without any relationship to each other, the one for the masses and the other for a more elegant clientele.

The fact, however, that elementary education was for the masses was the force that brought about a swift evolution in purpose, causing it eventually to outstrip secondary education in their respective growths toward modernity. It is quite generally recognized among educators today that the elementary school has become much more liberal than the secondary school in its functioning and in its program and curriculum. As the elementary school became more flexible, introducing change and discovering new methods, and the high school more and more limited its objectives by regarding itself primarily as a training for college, the two institutions developed separate traditions, each quite out of harmony with the other.

II. EVOLUTION OF AIM IN ELEMENTARY EDUCATION

Organized elementary education first came into being during the Protestant Reformation in Europe. Educationally the chief importance of the Reformation was the impetus it gave to the establishment of a widespread system of schools, a program for which the church, the family, and later the state assumed responsibility.

The early elementary schools of Germany had a strong religious background requiring the teaching of reading, writing, religion, and church music. In America the earliest systems of schools were found in the New England colonies and there, as in Germany, these systems reflected the spirit of the Reformation. For example, the frequently quoted preamble of the Massachusetts law of 1647 clearly points out its dominant motive:

It being one chief project of that old deluder, Satan, to keep men from the knowledge of the Scriptures, as, in former times, keeping them in an unknown tongue, so in these later times, by persuading them from the use of tongues, so that at last the true sense and meaning of the original might be clouded and corrupted with false glosses of deceivers; and to the end, that learning may not be buried in the graves of our forefathers, in Church and Commonwealth, the Lord assisting our endeavors, . . .

With this purpose in mind, it was ordained by the law that an elementary school be established in every town of fifty families or more.

An analysis of this point of view makes it clear that the original purpose of the elementary school was to train the child for "life hereafter."

Following the Renaissance came a new point of view concerning the function of education. This point of view, called "realism," developed during the period and represented a philosophical and scientific approach to educational meanings.

The new school of thought developing under the realistic banner protested against the dominant narrowly classical and disciplinary learning. It looked upon education as a means for attaining a knowledge of human motives, of the relation of man to his social institutions, and of the relation of man to his environment. Although the purpose of education from this viewpoint was somewhat broader, the old subject matter was retained. But knowledge of scholastic form and pattern was now important only as a means to an end. Study itself, and even mastery, had for its purpose the physical, moral, and social development of the individual. In its broadest sense, the goal of education was freedom of thought and of action in contrast to complacent acceptance of authority.

With realism, education as training for future life was abandoned and it was now looked upon as a means of training for adult life. It was to be made contributory and its content applicable to the problems of adult life. Learning was to take place through travel and through actual contact with objects and with a world of affairs as well as through

study. This movement was thus a reaction against the concept that only the old is good and that education consists entirely in reading from books the thoughts of great men of past centuries.

The closest approach of early realism to the modern conception of education can be found in the "sense-realists." The term was applied to this group because of their belief that knowledge comes only through the senses. This view implies that education requires something more than formalized memory training and a knowledge of the disciplinary techniques of teaching. Extreme bookishness was rejected, and a learning through what we would now call the activity method was substituted.

The sense-realists advocated the idea that education itself is a natural unfolding or development of the individual. Further, and this second point in their theory was of importance in weakening the hold of the dogmatic method of the disciplinarians, the laws or principles of learning and of teaching were discoverable through investigation and inquiry. This attitude assisted in developing the concept that the curriculum was not a set pattern but an emerging pattern growing from the needs of contemporary life. On the other hand the sense-realists did not develop this theory to its logical conclusion.

The shortcoming of this view lay in the fact that the emphasis upon development and unfolding as a natural process led to a study of the child only in minor instances. Most of the thinking on the part of these educators dealt with the theory of knowledge. Like that of their predecessors, their theory was still of what might be called the "armchair" type. Children's needs and interests were determined by what adults thought they would be rather than by actual study and observation of boys and girls. In other words, whereas their thinking about the curriculum was scientific and realistic, their attitude toward the needs of childhood was still theoretical, still the unscientific view that childhood is nothing more than a miniature adulthood.

The last step in the evolution of educational goals came about only after the three great epochs of western cultural development had revealed their tremendous social impli-



Play as well as work has a place in the school; these are first grade children.
(Courtesy of the East Grand Rapids, Michigan, Public Schools)

cations. Those three great epochs, the Renaissance, the development of science, and the political emergence of the common man, had to be passed through before education could be looked upon as synonymous with contemporary life rather than as a preparation for something, be it life hereafter or life at some future period of adulthood.

It is from this point of view, that education is life itself and not a preparation for the future, that all our modern conceptions of education have evolved.¹ Thus our current ideas of education as a natural not an artificial process, as a development from within rather than an absorption from without, as an inspiring and stimulating of natural instincts and reactions, as expression of natural powers and development, are not entirely modern in the true sense. They all have their roots in the revolutionary period of European history, in the time when Rousseau proclaimed

¹ See SCHNEIDEMAN ROSE, *Democratic Education in Practice*. New York: Harper and Brothers, 1945.

that human happiness and the development of all human traits was the natural right of every individual and not the privilege of a special class alone.

Although with different emphasis, the two earlier conceptions of education — education as training for life hereafter and education as training for future useful adult life — aimed to guide the development of the child by forcing upon him the traditional, accepted way of behaving and acting. Conformity was thus the chief virtue and individuality the chief sin. Both conceptions of education substituted for an emphasis on the natural or the developmental an emphasis on reactions, real to the adult but artificial to childhood, which had been approved and adopted by church, society, and institutional thinking of generation upon generation. Human emotions, senses, and desires were to be distrusted and were certainly unfit to be utilized in the instructional process. Any educational task that was difficult or distasteful was seized upon as possessing educational values, because it would keep those devil-inspired human urges under subjection.

The authors wish they had space to trace the evolution of aim through the centuries intervening between sense-realism and the present concepts. It makes an interesting and valuable story, but this is not a book on the history of education. Modern aim cannot well be understood without knowing something about its origins, but most of the development can and must be omitted. So let us now stride over some two hundred years of development of educational aim, content, and method and arrive at the mid-twentieth century views.

A current American interpretation of education for childhood can be found in the "Children's Charter,"¹ a statement originating from President Hoover's White House Conference.

President Hoover's White House Conference on Child Health and Protection, recognizing the rights of the child as the first rights of citizenship, pledges itself to these aims for the children of America :

¹ WHITE HOUSE CONFERENCE. *Addresses and Abstracts of Committee Reports*. New York: D. Appleton-Century Company, 1930, pp. 46-49.

- I. For every child, spiritual and moral training to help him to stand firm under the pressure of life.
- II. For every child, understanding and the guarding of his personality as his most precious right.
- III. For every child, a home and that love and security which a home provides; and for the child who must receive foster care, the nearest substitutes for his own home.
- IV. For every child, full preparation for his birth, his mother receiving prenatal, natal, and postnatal care; and the establishment of such protective measures as will make child-bearing safer.
- V. For every child, health protection from birth through adolescence, including: periodical health examinations and, where needed, care of specialists and hospital treatment; regular dental examinations and care of the teeth; protective and preventive measures against communicable diseases; the insuring of pure food, pure milk, and pure water.
- VI. For every child, from birth through adolescence, promotion of health, including health instruction and a health program, wholesome physical and mental recreation, with teachers and leaders adequately trained.
- VII. For every child, a dwelling place, safe, sanitary, and wholesome, with reasonable provisions for privacy; free from conditions which tend to thwart his development and a home environment harmonious and enriching.
- VIII. For every child, a school which is safe from hazards, sanitary, properly equipped, lighted, and ventilated. For younger children, nursery schools and kindergartens to supplement home care.
- IX. For every child, a community which recognizes and plans for his needs, protects him against physical dangers, moral hazards, and disease; provides him with safe and wholesome places for play and recreation; and makes provision for his cultural and social needs.
- X. For every child, an education which, through the discovery and development of his individual abilities, prepares him for life; and, through training and vocational guidance, prepares him for a living which will yield him the maximum of satisfaction.

- XI. For every child, such teaching and training as will prepare him for successful parenthood, homemaking, and the rights of citizenship; and, for a parent, supplementary training to fit him to deal wisely with the problems of parenthood.
- XII. For every child, education for safety and protection against accidents to which modern conditions subject him; those to which he is directly exposed and those which, through loss or maiming of his parents, affect him indirectly.
- XIII. For every child who is blind, deaf, crippled, or otherwise physically handicapped, such measures as will early discover and diagnose his handicap, provide care and treatment, and so train him that he may become an asset to society rather than a liability. Expenses of these services should be borne publicly when they cannot be privately met.
- XIV. For every child who is in conflict with society, the right to be dealt with intelligently as society's charge, not society's outcast; with the home, the school, the church, the court, and the institution when needed, shaped to return him whenever possible to the normal stream of life.
- XV. For every child, the right to grow up in a family with an adequate standard of living and the security of a stable income as the surest safeguard against social handicaps.
- XVI. For every child, protection against labor that stunts growth, either physical or mental, that limits education, that deprives children of the right of comradeship, of play, and of joy.
- XVII. For every rural child, as satisfactory schooling and health services as for the city child, and an extension to rural families of social, recreational, and cultural facilities.
- XVIII. To supplement the home and the school in the training of youth, and to return to them those interests of which modern life tends to cheat children, every stimulation and encouragement should be given to the extension and development of the voluntary youth organizations.
- XIX. To make everywhere available these minimum protections of the health and welfare of children, there should be a district, county, or community organiza-

tion for health, education, and welfare of children, with full-time officials, coordinating with a state-wide program which will be responsive to a nation-wide service of general information, statistics, and scientific research. This should include:

(a) Trained, full-time public health officials, with public health nurses, sanitary inspection, and laboratory workers.

(b) Available hospital beds.

(c) Full-time public welfare service for the relief, aid, and guidance of children in special need due to poverty, misfortune, or behavior difficulties, and for the protection of children from abuse, neglect, exploitation, or moral hazard.

The point of view represented above indicates that educational needs are broader than those that can be met by the school alone, and that all community facilities must be organized and affiliated to meet the problems.

One of the most popular and probably most far-reaching statements emphasizing an integrated individual-social development, not directed especially at the elementary school but nevertheless appropriate to it, is the statement of the Educational Policies Commission.¹

THE OBJECTIVES OF SELF-REALIZATION

The Inquiring Mind. The educated person has an appetite for learning.

Speech. The educated person can speak the mother tongue efficiently.

Writing. The educated person writes the mother tongue effectively.

Number. The educated person solves his problems of counting and calculating.

Sight and Hearing. The educated person is skilled in listening and observing.

Health Knowledge. The educated person understands the basic facts concerning health and disease.

Health Habits. The educated person protects his own health and that of his dependents.

¹ EDUCATIONAL POLICIES COMMISSION. *The Purposes of Education in an American Democracy*. Washington: National Education Association, 1938, Chaps. IV-VII.

Public Health. The educated person works to improve the health of the community.

Recreation. The educated person is participant and spectator in many sports and other pastimes.

Intellectual Interests. The educated person has mental resources for the use of leisure.

Esthetic Interests. The educated person appreciates beauty.

Character. The educated person gives responsible direction to his own life.

THE OBJECTIVES OF HUMAN RELATIONSHIP

Respect for Humanity. The educated person puts human relationships first.

Friendships. The educated person enjoys a rich, sincere, and varied social life.

Cooperation. The educated person can work and play with others.

Courtesy. The educated person observes the amenities of social behavior.

Appreciation of the Home. The educated person appreciates the family as a social institution.

Conservation of the Home. The educated person conserves family ideals.

Home-making. The educated person is skilled in home-making.

Democracy in the Home. The educated person maintains democratic family relationships.

THE OBJECTIVES OF ECONOMIC EFFICIENCY

Work. The educated producer knows the satisfaction of good workmanship.

Occupational Information. The educated producer understands the requirements and opportunities for various jobs.

Occupational Choice. The educated producer succeeds in his chosen vocation.

Occupational Adjustment. The educated producer maintains and improves his efficiency.

Occupational Appreciation. The educated producer appreciates the social value of his work.

Personal Economics. The educated consumer plans the economics of his own life.

Consumer Judgment. The educated consumer develops standards for guiding his expenditures.

Efficiency in Buying. The educated consumer is an informed and skillful buyer.

Consumer Protection. The educated consumer takes appropriate measures to safeguard his interests.

THE OBJECTIVES OF CIVIC RESPONSIBILITY

Social Justice. The educated citizen is sensitive to the disparities of human circumstance.

Social Activity. The educated citizen acts to correct unsatisfactory conditions.

Social Understanding. The educated citizen seeks to understand social structures and social processes.

Critical Judgment. The educated citizen has defenses against propaganda.

Tolerance. The educated citizen respects honest differences of opinion.

Conservation. The educated citizen has a regard for the nation's resources.

Social Applications of Science. The educated citizen measures scientific advance by its contribution to the general welfare.

World Citizenship. The educated citizen is a cooperating member of the world community.

Law Observance. The educated citizen respects the law.

Economic Literacy. The educated citizen is economically literate.

Political Citizenship. The educated citizen accepts his civic duties.

Devotion to Democracy. The educated citizen acts upon an unswerving loyalty to democratic ideals.

One of the best statements of purpose of the elementary school appears in one of the Bulletins of the Department of Public Instruction of the State of Michigan. According to this statement:¹

Modern elementary education seeks the well-balanced, rich, personality development of the whole child. Schools have always sought to develop the mental and moral qualities of pupils, but today elementary schools look to the growth of the whole child — physical, mental, social, emotional, and spiritual. These ends are not sought merely for their own sake and

¹ *Instructional Practices in Elementary Schools* (Bulletin No. 306). Lansing, Mich.: Department of Public Instruction, State of Michigan, 1938, pp. 7-9.

in isolation, but as closely related avenues of growth toward enriched life for individuals and for society.

Physical growth and development are of first concern in the education of the child. Three essentials for assuring physical development are: (1) meaningful information; (2) the formation of useful habits; and (3) the creation of ideals and attitudes which guide conduct.

Meaningful information on health may come from books and from objective laboratory teaching in the school. Much more can be gained by carefully planned visits to food markets, bakeries, canneries, meat packing establishments, dairies, creameries, and the like where may be seen the actual processes which insure health. Information so gained will have much greater significance than if merely read from books and discussed in classes.

This information may be carried over into useful habits through practice in the lives of pupils in school, home, and community. It is vitally important that the sanitary equipment and practices of the school harmonize with the requirements of a modern health program. Habitual attention to personal cleanliness, proper diet, rest, recreation, physical examinations, and early correction of defects are matters of extreme importance. Healthful living becomes an integral part of normal daily living. The practices at school, at home, and in the community must harmonize if steady progress in habit formation is realized. Thus it is necessary for the school, home, and community to cooperate fully and constantly to insure the formation of proper health habits as a foundation for physical development of the child.

Through the gaining of such information and the constant practice of desirable health habits, ideals and attitudes that bear fruit in determining conduct are thoroughly established. The mutual understanding, sympathy, and support of school, home, and community lend such power of impression that ideals are firmly established. This is why the health program of the modern elementary school is so much broader than formerly. This is why such extensive programs of physical education in classrooms, gymnasiums, playgrounds, and parks are considered essential in the physical welfare and growth of the child.

In much the same way a broader concept of mental development dominates elementary education today. It is still vitally important that useful facts contained in books become

a part of the mental development of the elementary child. But this is not all. Museums, exhibits, industrial, social, and cultural institutions and activities speak volumes to intelligently guided observers. Excursions and field trips bring pupils face to face with ideas at work in the world. Opportunity is provided for pupils to exercise initiative, analyze meanings, and arrive at judgments. By such experiences pupils are given objective bases for thinking and problem solving.

Social development is considered an essential part of the program in elementary education. A knowledge of social institutions, functions, and activities is one step. Another is actual participation in social life within and without the school to gain experience in the art of social functioning. So the elementary pupil is given every opportunity to practice leadership and followership in committees, organizations, and activities in the school. Cooperative activity between various groups, respect for the contributions of others, the common courtesies toward individuals and groups, and responsibility for the conduct of his own activity group are means the modern school provides for the social development of the child.

Proper emotional balance is coming to be recognized as a significant part of the child's development. The modern elementary school seeks to give proper attention to this important aspect of child growth. Every opportunity is provided to allow for a normal, well-balanced emotional life. Kindly sympathy and a sincere effort to understand every child in his likes, dislikes, fears, and inhibitions are constant objectives. Promotion of cheerfulness, happiness, frankness, and freedom of expression is a part of the program. The development of broad interests, participation in music, dramatics, art, and physical activity help to develop a well-rounded emotional life for the child in the modern elementary school.

The school also seeks the spiritual development of the child. The dynamic for promoting the highest possible growth of the child is more than physical, more than mental, more than social. It is spiritual. Happiness is a spiritual quality. Love of the beautiful in music, in art, in nature, in human nature, and in nobility of character is a spiritual quality. These are qualities of the spiritual nature the modern elementary school seeks to develop.

Thus modern elementary education seeks the well-balanced development of the whole child. His physical, mental, social, emotional, and spiritual growth is sought. The effort of the

school is to develop these various phases of child growth simultaneously and progressively toward a complete human being worthy of a place in the onward march of human progress.

III. PSYCHOLOGICAL FOUNDATIONS FOR CURRENT VIEWPOINTS

The points of view of the Children's Charter, the Educational Policies Commission, and the Michigan statement all have certain common elements — elements, however, somewhat different from those of earlier statements of purpose in elementary education. This difference can be expressed briefly as an emphasis on child development rather than on child learning, on the enriching of personality rather than on the stamping in of institutional goals. And this point of view is meeting with growing popularity among teachers and with ever widening acceptance.¹

Let us now see how and why child development is being emphasized and what are the psychological foundations supporting the view.

First, educational aims for the elementary school and for the secondary school are tending to merge. Almost no psychologist of repute advocates today that growth and development break up into distinct periods. Growth has not always been considered as a continuous process, however. In fact it was formerly felt that elementary education correlated with one definite phase of development and high school education with another. The elementary school has been thought of exclusively as a school for pre-adolescents, and the high school exclusively as a school for adolescents.

It is not our purpose to imply that the child does not have changing interests as he matures and grows from childhood to maturity. Specifically, we are trying to point out that the elementary and the secondary school periods cannot be entirely correlated with beginning and end points of phases of child growth. Growth is a continuous process with the cycles or periods of development overlapping. It is not characterized by sharp breaks or cycles completely differentiated. It is true that the growth process is char-

¹ For an excellent presentation of modern aims in teaching see MELVIN, A. GORDON. *Teaching*. New York: The John Day Company, 1944.

acterized by changes in growth rates but not by sharp and unforewarned breaks and plateaus. The child does not begin a cycle of growth only after he has completed a previous cycle. The adolescent cycle begins before the childhood cycle ends. Adolescence begins not at twelve, thirteen, or fourteen as has generally been believed but has its foundations (its beginning growth) at nine, ten, eleven.¹ In other words, while it is unquestionably true that outward evidences of adolescence are obvious at twelve, thirteen, or fourteen, these are not necessarily the beginnings.

Second, another reason for the shift from emphasis on subject matter to emphasis on child development is the growing belief that learning patterns and the achievement of specific learnings are themselves aspects of growth. It is clear that they are influenced by many other factors than teaching or schooling alone. Thus the utilization of community studies, the gradually growing cooperative tie-up between school and other community institutions, the use of school time for explorations and trips, and the development of socialized projects are being used today not for their social values alone but because a wide variety of special studies indicates that learning is influenced by this type of activity as well as by the more formal classroom and drill techniques. Indeed, there is so much evidence today of the effect of the total environmental culture upon learning and growth patterns that the teacher must consider seriously the idea that educational objectives can best be accomplished by directing child growth; by providing guidance in the selection of learning activities; by helping the child to explore, to experience, to generalize from his experiences; and by doing everything that might be regarded as an improvement or an enrichment of his total educational milieu. This point of view has been well expressed by Willard C. Olson on a number of occasions. Professor Olson, whose studies are concerned with long-time observation of the same children, insists that school achievement is an aspect of growth and that we should emphasize interpretations in terms of the whole child in a social field

¹ Verified by the Harvard data, the Child Development Conferences reports, the data of Olson, Courtis, Millard, and others.

of force rather than interpretations that stress the dependence of achievement on intelligence.

The general growth studies under way at the University of Michigan and the University of Chicago and the studies from the University of Iowa, all have implications regarding the importance of the total environmental culture as a factor in conditioning learning.

Third, the type of evidence mentioned above tends to justify broad learning experiences, that is, projects or consolidations of subject-matter areas, as suitable for subject-matter learnings. Learning is beginning to be recognized as a natural concomitant of the total environmental stimulus rather than a specific extraneous force. This view is in harmony with what has lately been called the "organismic" psychology. The organismic view looks upon the development of the mind, for example, as a counterpart of physical development. In other words, it represents an extreme departure from the old "faculty" psychology, which demanded training for each specific function. This new psychology is not a frill, a fad, or something novel which invalidates everything that has gone before. Rather, it represents a complete transition from a position of pure rationalization to a position near complete scientific verification and understanding. As stated by Brim:¹

The psychology upon which Dewey founded his program has emerged in clarity. Biological findings have changed their concept of a static and fixed universe to one that is dynamic and 'becoming.' Increasingly, philosophy is discarding its concept of superimposed and fixed values. Man, under the guidance of, and by means of, his intelligence, is viewed as responsible for conceiving and achieving his better tomorrow. Ability wisely to select values, to think, to plan, to execute, are held to be the essence of the good life. The significance of democracy as a 'way of life' rather than as a form of government is appearing with ever greater detail.

Here . . . are the sources of the criteria of the 'good life' which surely must begin to challenge education. How does the activity movement square with them? . . .

¹ BRIM, O. G. "Basic Realities and the Activity Program." *Progressive Education*. XI: 330-333. May, 1934.

On the psychological side, the activity school conceives the child as a dynamic, purposing organism, rather than as an atomistic responding mechanism. It is reacting to an atomistic and mechanistic conception of nature and life, borrowed from old physics and injected into education through our behavioristic psychologies, aided and abetted by scientific concepts and techniques borrowed bodily from physical sciences.

This new psychological concept is not without solid foundation. Coghill finds the nervous system developing not in response to external stimuli, but through an inner dynamic and according to a predetermined pattern which he calls the 'growth potential.' . . . Growth, then, is the creative function of the nervous system. He concludes that man is, within the limitation of life sensitivity and growth, creating and operating himself.

He furthermore finds that the nervous system develops from the beginning, through the progressive expansion of a perfectly integrated total pattern and the individuation within it of partial patterns which acquire various degrees of discreteness, rather than through the connecting of small neural units into a larger system. . . . The human being is organismically related, all parts are interdependent and interactive. The whole child is not a fiction. Multiple learning is a fact. The effort to integrate school activities and these with life experiences is but sane psychology.

Thus conceiving the development of the nervous system as the expression of a growth potential, the individual as dynamic, one must take seriously the claims of those psychologists who speak in terms of maturation, goal, and insight. The data are far too impressive to treat lightly. That they point in the direction of the activity-school organization, seems unquestionable. . . . Coghill conceives the development of the nervous system as a creative process. 'Growth,' according to him, 'may be conceived as the creative function of the nervous system.' . . .

Fourth, the transition from the concept that learning results entirely within a specific classroom situation and consequently can be evaluated from the criterion of standards or averages is the result of our recently accumulating knowledge of how the child grows. The most important and clear-cut information we have on child growth today

points to the individuality of growth. Individuality has long been recognized; but traditionally, in relation to classroom learning, it has been seen almost entirely in terms of differences in time required for different children to learn various skills. The slow child, from this point of view, is given more time than the brighter child but both have been expected, with different time allowances, to meet the same standards of competency. Recent studies in child growth and development indicate that more exact interpretations must be made. The most important of these point to certain similarities in all the different kinds of growth patterns of a given individual. One of the best of these studies has been made by Olson and Hughes.¹ In their recent publication they remark:

The growth curves . . . illustrate the extent to which the organism is a unified whole. The attributes of the individual are usually less variable than they are for a group of children. The tendency toward unified organization is one of the first generalizations of the organism as a whole. More detailed analysis leads to a study of plateaus, spurts, time lag, and patterns. It is from evidence of this type that we conclude that educational achievement is a function of growth as a whole, rather than of any single attribute such as mental age.

The conclusion to be drawn from such statements indicates that there is a certain persistence of individuality in a learning curve which cannot be overcome by drill or pressure or the traditional devices of rewards and punishments.

Fifth, recent studies of the effect of teaching justify a relaxation of the teacher's dominance in educational planning and other relationships which teachers have felt were responsibilities reserved entirely for them.

No one will seriously deny that children learn outside of school as well as in school. Nor will any sensible person propose that teaching has no values. The point to be made here is that increases in the amount of pupil learning are not entirely and exclusively the effect of teaching. Sensible

¹ OLSON, W. C., and HUGHES, C. O. *The Child as a Whole*. A pamphlet issued by Dr. Olson from the University of Michigan.

as this statement seems, nevertheless teachers, psychologists, evaluators of learning, principals, superintendents, and other research workers have almost universally failed to make note of the idea. Proof of this neglect is found in almost any educational experiment involving the giving of tests before and after an experimental period and crediting all gain to the effect of whatever factor is being evaluated. Teaching must be looked upon as a force or a stimulant able to produce modifications in the natural growth pattern of the individual but not as a force producing the total change. The point of view of Olson is pertinent in this connection:¹

Longitudinal and experimental studies of the relation of nurture to development suggest that a relatively larger amount of attention should be given to maturation and growth as factors in understanding how children achieve mature status in any function of interest to schools.

In an experimental study in reading in which test data were collected over a period of years, it was found that the graph of progress of each child followed a pattern of development in which it was impossible to relate deviations from the pattern to differences in teaching methods of the various teachers of the child as he progressed in school.²

At certain times during the period covered in the study, many of the children had special remedial help, after-school assistance, etc., but from the curve of progress of one of these children it would be impossible to tell when the special help was given. In other words, as the child progresses through school, deviations in his pattern of growth often appear without relation to the specific type of teaching he is experiencing. Studies of this type indicate that learning is a product of something "over and above" teaching. And certainly this kind of data should enable teachers conscientiously to release the pressure which many feel necessary in achieving desirable results. Apparently,

¹ OLSON, W. C. "New Concepts of Human Development of Importance for the Education of Teachers." In *Eleventh Annual Conference on Teacher Education, University of Michigan, Ann Arbor, April 1940*.

² MILLARD, C. V. "The Nature and Character of Pre-Adolescent Growth in Reading Achievement." *Child Development*. II: 71-114. Feb., 1940.

broad experiencing plus individual direction in study is the requisite for a satisfactory development of the child.

IV. IN CONCLUSION

During the course of this chapter the authors have attempted to review briefly the philosophy and aims of the elementary school of the past which have contributed to present-day concepts. They have also stated the psychological foundations upon which depend current viewpoints for elementary education.

In the chapters to come an attempt will be made to demonstrate how theory can be translated into practice. It is not enough to theorize without indicating means of implementation.

Beyond much doubt schools are going to change in many important respects. The school of the past was perfectly satisfactory in a horse-and-buggy age, when the only demand made upon it was to instill subject-matter knowledge. Just as the day of the horse-drawn vehicle and kerosene lamp is now history, so the school of the nineteenth and early twentieth century is obsolete. We cannot lag behind scientific discoveries and altered modes of life in our institutional development or we shall reap a whirlwind of poor health and bodily development, inadequate social adjustment, incomplete personality development, and ineffective citizenship functions. The one unalterable law of the universe, which applies to schools as well as to ways of making a living, customs, and social life, is that change is inevitable. To keep a nineteenth century system of education in the dynamic mid-twentieth century is to maintain a pattern which is artificial, out-moded, and ineffective.

Education, in and of itself, is not all of life but it is a vital part of it. The school has a part to play but it can fulfill its mission only when it is built upon normal life interests, needs, and activities.

To sum up, then, the authors intend, above all else, to be practical. They intend, further, to portray education as a vital, dynamic process which is a part of the total pattern of conditioning to which the child reacts. What of the old is

still valid will be used, but the dead hand of the past will not be allowed to grasp and hinder the new shoots which will help schools contribute to the better life that is a heritage of the present generation of children.

SELECTED REFERENCES

1. CASWELL, HOLLIS L. *Education in the Elementary School*. New York: American Book Company, 1942.
2. CUBBERLEY, ELWOOD P. *Public Education in the United States*. Boston: Houghton Mifflin Company, 1919.
3. EBY, FREDERICK, and ARROWOOD, CHARLES F. *The Development of Modern Education*. New York: Prentice-Hall, Inc., 1934.
4. KNIGHT, EDGAR W. *Twenty Centuries of Education*. Boston: Ginn and Company, 1940.
5. MELVIN, A. GORDON. *Teaching*. New York: The John Day Company, 1944.
6. MONROE, PAUL. *A Textbook in the History of Education*. New York: The Macmillan Company, 1905.
7. ——— *The Founding of the American Public School System*. New York: The Macmillan Company, 1940.
8. NOBLE, STUART G. *A History of American Education*. New York: Farrar and Rinehart, Inc., 1938.
9. REISNER, EDWARD H. *The Evolution of the Common School*. New York: The Macmillan Company, 1930.
10. SCHNEIDEMAN, ROSE. *Democratic Education in Practice*. New York: Harper and Brothers, 1945.
11. WILDS, ELMER H. *The Foundations of Modern Education*. New York: Farrar and Rinehart, Inc., 1942.
12. *Fifteenth Year Book of the Department of Elementary School Principals, Michigan Education Association*. "Child Growth in an Era of Conflict." Lansing, Mich.: Michigan Education Association, 1944.

Basic Growth Concepts

MANY TEACHERS have accepted the philosophy of child development but if hard pressed would have some trouble in explaining just what it means. It is natural that they should be thrilled by the slogan, "The whole child goes to school." And if this isn't enough to awaken ideas long dormant because of the disintegrating effects of regimented, overcrowded classrooms, they are challenged by such ideas as, "You can't parcel out the child, one part for one subject, another part for another subject." No one of course will protest against the inspiration these symbols may bring to teachers overworked by such detail as correcting innumerable papers and making out report cards. But inspiration alone is not enough; only through knowledge and understanding of child growth will significant changes be made in teaching. Inspiration alone will not show why Johnny is poor in his arithmetic, nor will inspiration alone explain why little Tommy is not learning to read. This chapter will therefore present some of the fundamental substantiated facts of child growth and development and their implications for instruction and organization.¹

I. HISTORICAL BACKGROUND

Child study is indebted to many fields for its present techniques. To trace accurately any one of its phases, evaluating various influences or assigning specific relationships, is a complex task far beyond the purpose of this

¹ For an excellent presentation of the child development point of view, the reader is referred to *Helping Teachers Understand Children*. Washington: American Council on Education, 1945.

chapter. Even if it were attempted here, one must realize that changing times lead to changing evaluations. What might have been said in the 1920's would be considerably different from what might be said in the 1940's. Current outlooks color one's estimate of the influence of past events, and as our concepts become more and more clear, we put old evaluations aside. This chapter, then, will consider only those historical developments that have contributed directly to current understandings of child growth and development that are educationally important.

The movement for the scientific study of human nature is approximately seventy years old. Many physiologists had approached the experimental study of psychological problems, but it is generally conceded that it was Wundt, in Germany, who first developed a laboratory for this purpose. He surveyed the field and dedicated his efforts to a coordination of contemporary problems. He was probably the most complete expression in his time of the scientific forces that were to emerge into what is known as modern psychology.

Of the students attracted from many lands to his laboratory, Cattell may be considered the most productive and original from our point of view, the most influential in stimulating experimental study in education. Entering the laboratory in 1880, he returned to America in 1888 as Professor of Psychology at the University of Pennsylvania, later transferring his experiments to Columbia University. In 1894, he used the first battery of psychological tests ever given to a large number of individuals.

In Cattell's laboratories Thorndike awakened experimenters to the possibilities in animal psychology. With chicks, cats, and dogs as subjects he made extensive studies on the nature of learning. Subsequent work led to his famous "Laws of Learning." In 1910 he published the first calibrated scale for the measurement of an educational product.

Since that time development has been rapid and diverse. Intelligence testing, begun by Binet and others, received a great impetus from the first World War, and achievement testing in the schools grew by leaps and bounds in the

next decade. Recent years have emphasized follow-up studies of children. This contribution added to those previously done makes up an extensive body of knowledge in child growth and development.

II. METHODS OF STUDY

We now have three approaches to the study of data on children. These are: (1) curves based on the averages of large groups of children; (2) curves based on the averages of the same children measured year after year; and (3) curves based on the measurements of an individual child year after year.

The word "cross-sectional" is the name applied to studies based on the averages of large groups of children. Most studies to date are of this kind. For example, if one wishes to get an idea of reading achievement in a school, the usual procedure is to run tests on first graders, second graders, third graders, and through all other grades. The average of each group gives an estimate of "normal" achievement in that school. In other words, "representative samplings" of children at successive age levels are tested. Averages are computed for the various age groups, and the resulting curve of development is plotted. Height norms, weight norms, average vocabularies, intelligence norms are only a few that have been thus acquired. In comparison with such averages, the status, development, or achievement of any individual child can be judged, and his achievement in respect to the characteristic under analysis can be interpreted.

The cross-sectional method, of course, has limitations not generally recognized by teachers who make use of study results. For example, one who knows anything at all about the effect of sex differences on growth is aware that no single norm adequately pictures the development of either sex. On the other hand, it must be said that the cross-sectional approach has a certain validity and if used within limits is valuable in pointing out general trends. But its limitations must be recognized. First, so-called "representative samplings" can be challenged. Only when

they are adequate can there be any worth in the resultant curve of development. Second, group norms may serve as expectancy standards for groups but are not necessarily adequate as expectancy standards for individuals. Variability of growth among individuals is so great as to rule out entirely the soundness of such comparison. Furthermore, since individuals grow and mature under differing kinds of conditions, a comparison with "average" norms usually overlooks the influence of varying factors in the growth of the individual. In this respect, comparison can be justified only where the factors under both sets of conditions are equivalent or approximately equivalent. Third, and this point is most important, characteristics of individual growth are "averaged out" in group norms. Rapid rises, plateaus, and new cycles, which are characteristic of individual growth, occur at different times among different children. When different children are used at different age levels in the accumulation of data, growth characteristics have no opportunity to show up in the ensuing norms.

The "longitudinal" approach, as the phrase is used here, refers to averages taken over a period of years in which the same children are used repeatedly as cases. Quite frequently longitudinal approach refers to any kind of study of individuals without necessarily determining averages. It is, however, considerably better than the cross-sectional, because it eliminates the problem of selecting children at various age levels who are approximately equivalent. No widespread use of this technique of constructing norms has yet become popularized.

Although the name longitudinal, as generally employed, refers to any long-time study of the same children, it cannot be used for both individual and group study unless it makes such a distinction. Individualized study, which is becoming more popular year after year because of the recognized unreliability of cross-sectional studies, is no doubt the only approach by which sound generalizations can be made about growth and development. After a number of measurements on a child have been gathered, it is possible to construct a graph from which valuable analytical interpretations can be obtained. Each individual's curve of development can

thus be evaluated and studied in relation to other aspects of his own development.

III. MAJOR USES OF MEASUREMENT IN CHILD STUDY

Measurement and observation data of children have had three general uses to date. The first, of which the well-known educational profile is typical, is characterized by a description of the status of pupils. Intelligence, achievement, aptitude, physical growth, and the like can be plotted in terms of such statistical measures as percentiles, standard deviations, growth, and achievement ages. A line drawn at the 50 percentile, at the zero deviation, or at the average normal age provides a comparison with the "profile" line drawn between the various points achieved by the child.

The second use is the growth analysis or plotted growth data on a child over a period of years. Several investigators have prepared common measures which can be computed from raw scores and which enable us to compare height, weight, mental age, achievement, grip, and other aspects of growth. To a limited extent the entire graph makes it possible to evaluate interests, teaching, and aptitudes, in terms of differences at a given time in the growth status of a child.

The third use of measurement data is in experimentation to determine the relative effects of different factors upon the growth and development of the child. Not much has been done in this field that will stand up under criticism. The Iowa studies on the constancy of the I.Q. represent major attempts in this direction. Other examples are common in the literature dealing with the comparative effects of different methods upon achievement. None of the analyses have yielded consistent results over the country. Inconsistency, in fact, is the rule rather than the exception. Because of so much disagreement the question can justifiably be raised as to whether it is possible in education and in child study to make general laws such as are found in the more exact sciences. According to Professor Courtis this is due to the fact that experimenters have borrowed

from the latter those techniques and skills that have been developed from static situations.

Growth is dynamic, not static. It is the result of interaction between the organism and its environment. It can be considered only in terms of growth units and through the study of cause and effect that is applicable in all the biological sciences. Most people believe that prediction and control in the educational field are impossible because so many growth outcomes, such as emotional maturity, resist exact measurement. Moreover there are people who do not desire accurate prediction and measurement.

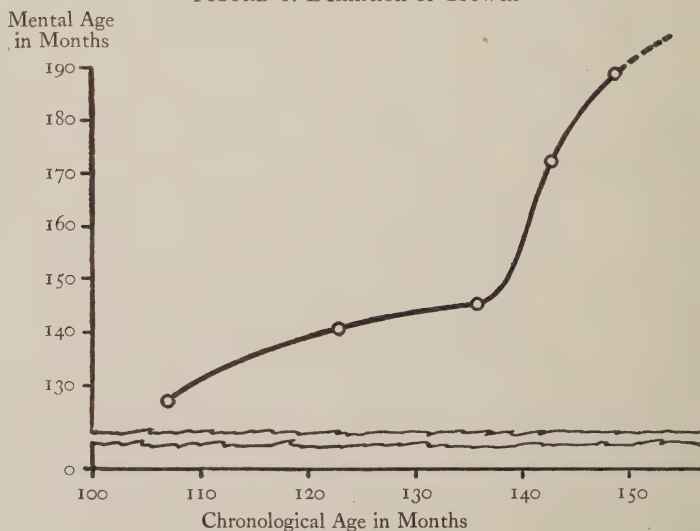
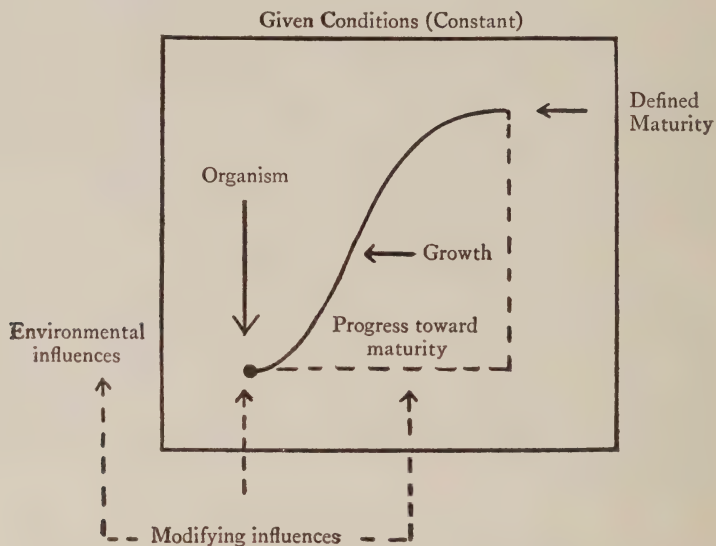
Such exactness is nevertheless approaching. In the near future it will be possible not only to point out how growth may be defined and measured and how modifying influences can be evaluated, but also to define specifically the interrelationships of various phases of growth. We shall, for example, be able to determine in definite measurement units the physiological maturity necessary when the child begins reading.

IV. WHAT IS GROWTH?

Growth is the general term used to describe what happens to a child from one date on the calendar to another. It is commonly applied to size, beauty, behavior, and a good many other physical characteristics related to a child, though it may also be applied to vocabulary, speech, locomotion, and social development.

Technically, growth is defined as progress toward a definite maturity made by an immature organism when acted upon by environmental forces under constant conditions. Such a relationship is shown in Figure 1. The two general factors in growth are nature and nurture, heredity and environment. Nature is that which grows, an organism; nurture includes all the forces that play upon nature to cause or to modify growth. As applied to human beings, the phrase "under constant conditions" refers to growth where every known factor is kept constant as completely and precisely as possible, not growth under ideal or impossible conditions. The phrase "modifying conditions" refers to forces in operation at a given time that tend to change

either the organism or any or all of the operating factors. Teaching, or a particular kind of teaching, is an illustration of such a modifying condition.



In Figure 1, growth follows an even pattern when the conditions under which it takes place are relatively constant. Conditions may change, and the picture of growth subsequently changes. This is illustrated in Figure 2. Here we have not one cycle but two. In other words, glandular changes associated with oncoming adolescence produce an entirely new set of nature factors.

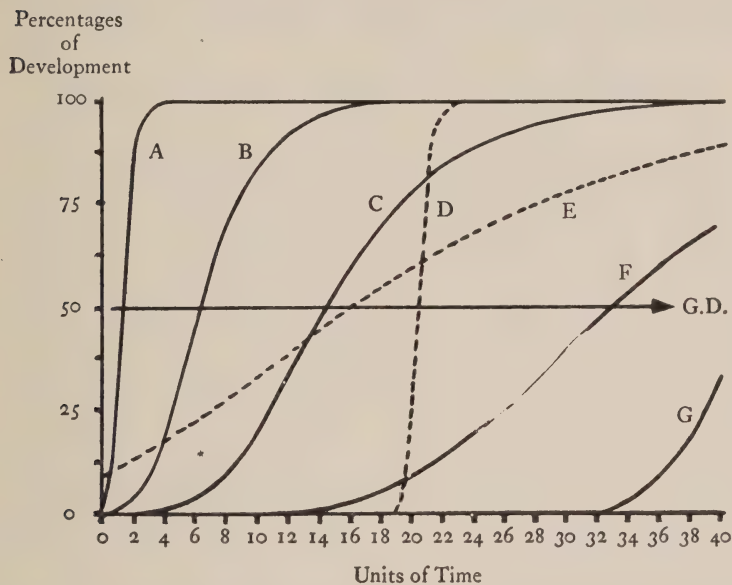


FIGURE 3. A Diagrammatic Representation of the Relations between Specific Maturations and General Maturation (from Courtis)¹

The first Figure illustrates what is known as simple or one-cycle growth. The second Figure illustrates complex or multi-cycle growth.

The maturation of the individual as a whole is a complex process in which there is a series of partial growth processes maturing in a sequential relationship. Examples are learning to creep, handling a spoon, cutting teeth, learning to read, and learning to reason. Each growth follows a definite pattern of beginning and end points, and each also follows

¹ COURTIS, S. A. "What Is a Growth Cycle?" *Growth*. I: 160. May, 1937.

an over-all general pattern. The simple maturations start early and end early; the more complex take a longer period of time. Each, however, can be studied separately and compared with one another, as in Figure 3.

In this Figure, the various curves A, B, C, D, E, F, G, represent specific maturities such as walking, social development, reading interests, reasoning, and reflective thinking. The arrow represents the progress of the growth of the individual as a whole in terms of general development.

V. IMPLICATIONS OF GROWTH FOR INSTRUCTION

There are many other facts about growth which this chapter deliberately ignores. It is not the purpose here to exhaust the subject but to present those facts and generalizations which have very obvious implications for instruction. It seems to the authors that such basic generalizations are: (1) Individual growth is unlike average growth; (2) Growth takes place in cycles; (3) Cycle development is common to all common phases of growth in which instruction is interested; and (4) All phases of growth taking place during the school career of the child are interrelated.

INDIVIDUAL GROWTH IS UNLIKE AVERAGE GROWTH. "Norms" or "averages" are indispensable in the conventional school, and in other places they are worshipped by many groups. It is customary to speak of "normal height" and "normal weight"; and girls everywhere do all they can to have their make-up, their dress, their slang, their dance, and even their dates fit a given standard.

Unfortunately the standards used in the schools are not abandoned so easily as are those of dress, hair, and dates. In most schools, standards are a tradition, handed on from generation to generation until they have become fixed, unalterable, and seemingly real. In other schools, however, some breaking away may be noted.

Studies of children over recent years have done much to shake faith in the value of norms. The graph of the averages of scores of hundreds of six-, seven-, eight-, nine-, and ten-year old children is quite different from the graph on *one* child over the same period of years (Figures 4, 5, 6).

Figure 4 shows the mental development of two girls tested periodically with the Kuhlman-Anderson group intelligence test. As far as one could tell from observing

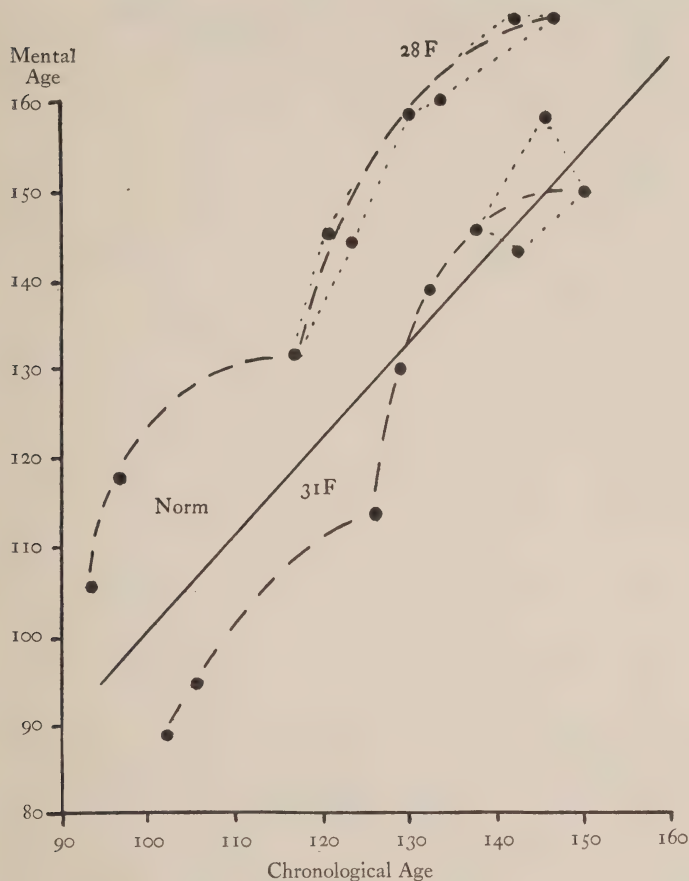


FIGURE 4. Mental Development

them in school, their development was quite normal and yet each curve of development deviates markedly from the straight-line norm which assumes an I.Q. of 100 as normal.

In Figure 5 a similar contrast is shown. Each of these two girls has an individuality in her pattern of growth which is so marked as to make comparison with a norm unfair.

Not only do the two girls in Figures 4, 5, and 6 markedly differ from the norm in their mental, academic, and physical growth, but they differ markedly from each other. To call

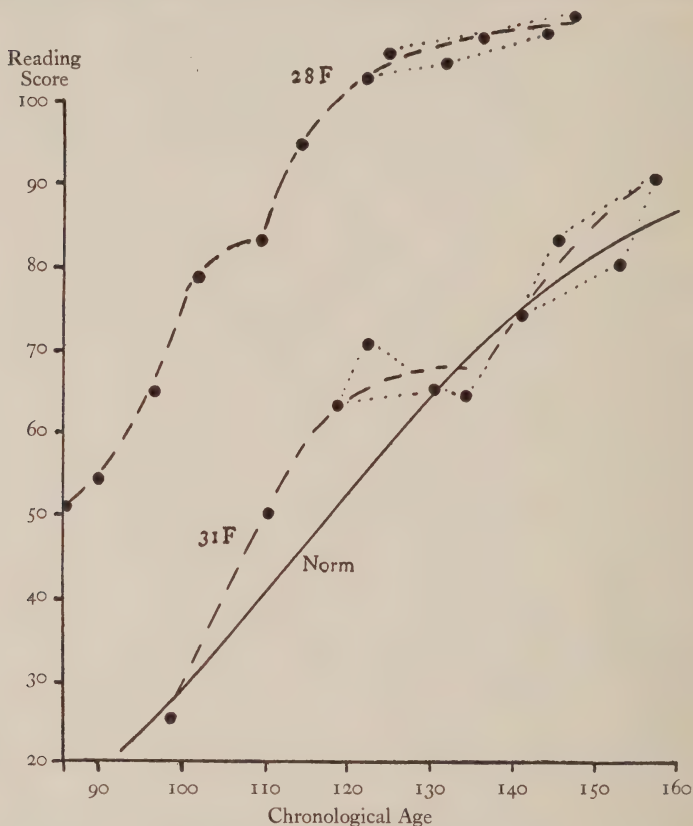


FIGURE 5. Achievement in Reading

either of them superior or inferior in height is an injustice, but one which is not so damaging as calling one inferior in reading, for example.

The two girls whose graphs are shown in Figures 4, 5, and 6 were selected at random from several hundred cases at hand. They demonstrate that growth is an individual matter. Because of its individuality it cannot be evaluated as formerly. It cannot be called "inferior" or "superior"

or given any other label resulting from comparison with a norm or a standard. To illustrate this point, the reader is asked to evaluate the reading achievement of the two children shown in Figure 7. Which child is the superior

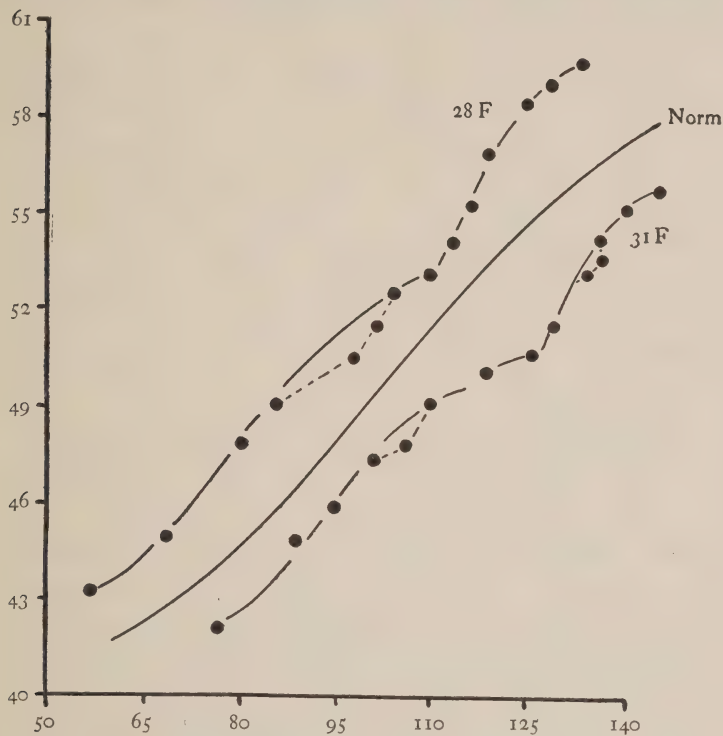


FIGURE 6. Growth in Height

reader? From the conventional standpoint the answer depends upon the time at which comparison is to be made. Actually the rates of growth for each individual are nearly uniform throughout the cycle; therefore no "improvement" in either has been made. Neither child is superior. There are slight differences in the rates of growth, a considerable difference in potentialities, and much difference in times at which growth started. Such an analysis points out the inadequacy of comparisons in terms of status from one marking period to another.

GROWTH TAKES PLACE IN CYCLES. Studies of the same children over extensive age spans have developed other generalizations than individuality of growth. In addition to discovering that a boy or girl grows in a way that is quite unlike a norm and quite unlike each other, we are

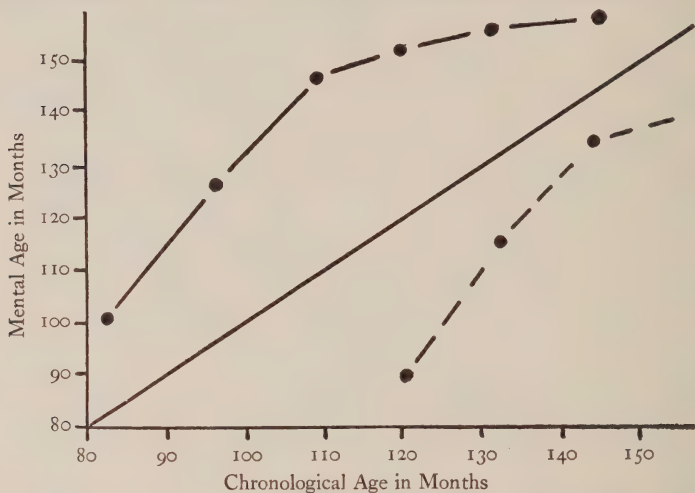


FIGURE 7. Comparison of Reading Curves of Two Boys of Equal I.Q.'s

discovering that many children show one common characteristic in their pattern of growth. This characteristic, which is obvious in Figures 4, 5, and 6, is that child growth is pictured by two or more cycles.

Earlier writers gave some indication of this fact. Scammon, for example, although stating that the general form of the individual curve is similar to the curve of means, finds that "prepuberal increase in height of the individual is a little more abrupt than that of the group."¹ He infers that at adolescence there is a breaking away from the previous pattern and a change in rate of growth. Baldwin makes no generalization but does indicate a change in rate after adolescence in certain instances:²

¹ SCAMMON, R. T. "The First Serial Study of Human Growth." *American Journal of Physical Anthropology*. X: 329-336. Feb., 1927.

² BALDWIN, BIRD T. *The Physical Growth of Children from Birth to Maturity*. (Studies in Child Welfare. Vol. I, No. 1.) Iowa City, Ia.: University of Iowa, 1921, p. 92.

If the increments of growth in stature before adolescence are relatively uniform (i.e., represented by a straight line on the charts) this uniformity in increase tends to persist throughout adolescence. If there is retardation before adolescence, the tendency is to show a rapid acceleration during adolescence as a compensating factor.

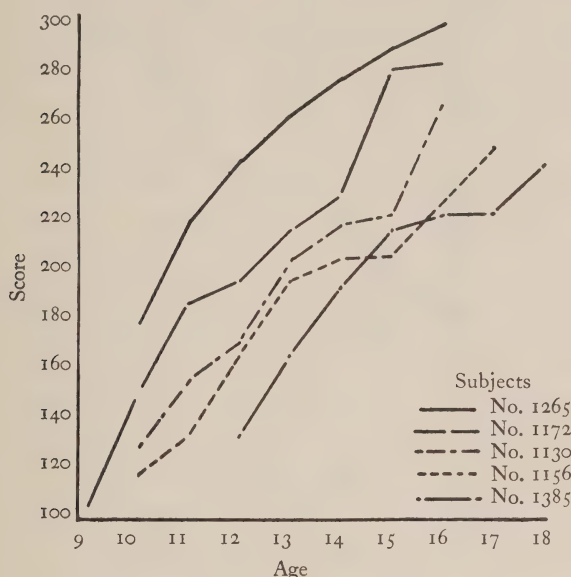


FIGURE 8. Some Selected Individual Growth Curves Which Suggest a Negatively Accelerated Development of Intellectual Abilities

One of the best illustrations of cycles is shown in the data of Freeman and Flory¹ (Figure 8).

These authors, however, indicate that they believe the characteristic mentioned is not found in all children:²

If curves such as those shown . . . were chosen, the view might be advanced that the nature of mental development is characterized by a positively accelerated curve from ten or

¹ FREEMAN, FRANK N., and FLORY, CHARLES D. *Growth in Intellectual Ability as Measured by Repeated Tests*. (Monographs of the Society for Research in Child Development, Vol. II, No. 2, Serial No. 9.) Washington: National Research Council, 1937, p. 60.

² *Ibid.*, p. 60.

eleven to age fourteen or fifteen. That is, just prior to and following the advent of puberty the curves of intellectual growth . . . may be positively accelerated.

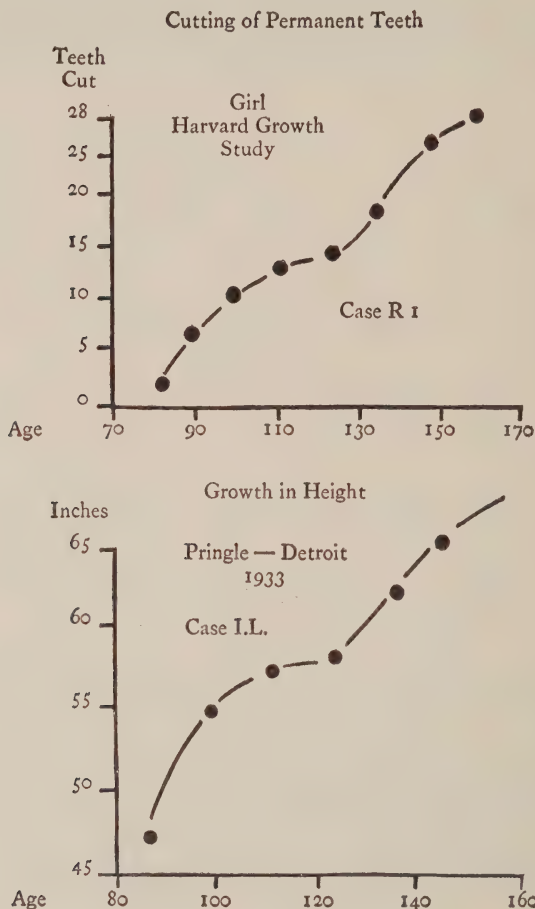


FIGURE 9. Courtis Growth Curves

The lack of discussion of this topic in general psychology textbooks is amazing. Child growth authorities, who have access to much information on individual growth curves, apparently are not yet ready to make broad generalizations. It is true that the question of cycles evades solution for

two reasons. In the first place, variability of performance makes it difficult to determine the true pattern of growth; a score resulting in a plateau may be due to nothing more than unreliability of performance — a chance score rather than a true measure. Second, researchers in child growth and development seem hesitant to utilize one or more of the biological equations in analyzing growth. Courtis alone boldly states: "During school years there are two major cycles of growth, childhood and adolescence, with traces of the effect of the cycle of infancy."¹ These are clearly indicated in Figure 9.

CYCLE DEVELOPMENT IS COMMON TO ALL PHASES OF GROWTH. Our third point is really an elaboration of the idea previously discussed. Not only does growth take place in cycles but the cycle effect is apparent within all phases of growth. To illustrate, two cases are shown from Courtis' studies² (Figure 10).

It will be noticed that growth in each phase of development begins rapidly, "rounds off" at 110 months for each child, and then makes a second abrupt rise and a second "rounding off." Each curve shows the two-cycle pattern mentioned earlier. The fact that each curve, for each child, begins a rapid rise about the same time indicates the advent of a new common factor, probably a physiological change.

Further illustrations of individual timing in respect to change in growth rate are shown in Figures 11 and 12. Here, as in the Courtis curves, the growth patterns of a given child are obviously similar to the two-cycle curve.

ALL PHASES OF GROWTH ARE INTERRELATED. The preceding figures demonstrate the interrelationship of various aspects of growth. This conclusion, however, though the most important of all growth concepts, is the least investigated. It would, for example, be much more significant to know the ratio of a child's physical development to his reading development than the ratio of his mental development to that of thousands of other children, commonly

¹ COURTIS, S. A. *The Significance of Maturation*, paper presented at the University of Pittsburgh, June 23, 1937.

² *Ibid.*, p. 5

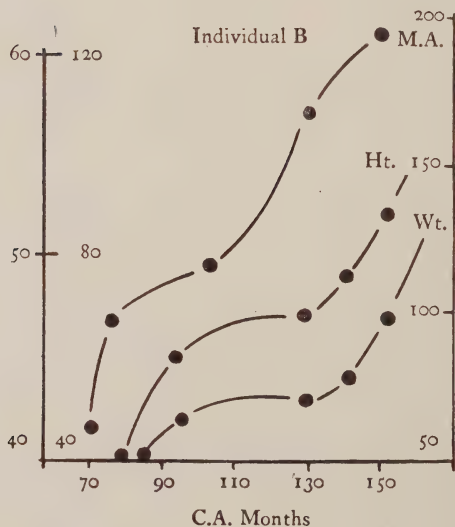
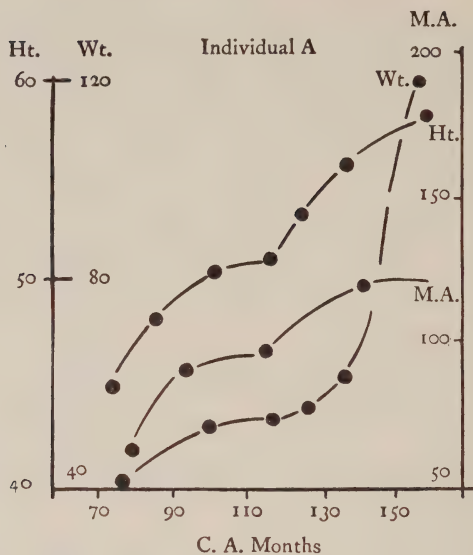


FIGURE 10. Courtis Studies—Individual Growth Curves in Height, Weight, and Mental Age. Data Supplied by Psychological Clinic, Hamtramck Public Schools.

called the norm. Although the relationships are now taken for granted, their expression in figures comparable to our I.Q. measures is still unexplored.

VI. IN CONCLUSION

The question of the existence of cycles is important. For example, one might justifiably postulate the idea that

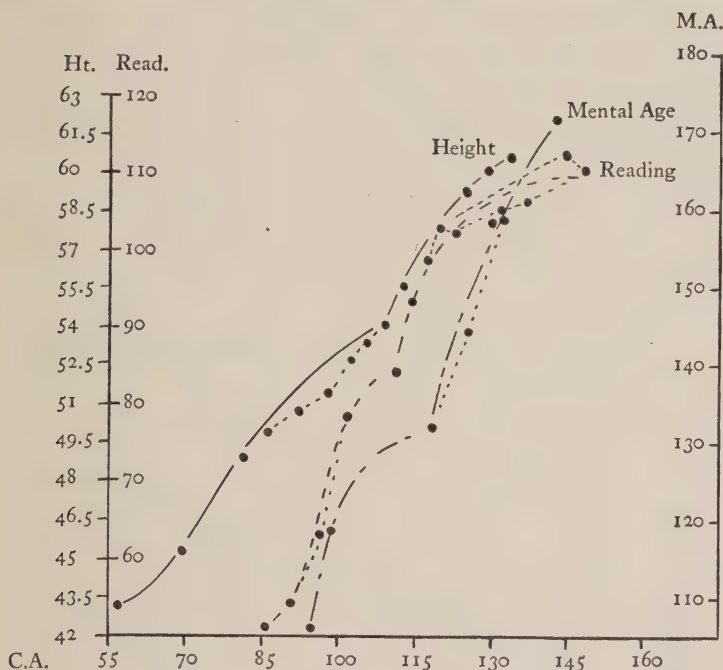


FIGURE 11. Case 28F (Millard)

reading should not be introduced until the end of the baby cycle, indicated by "b" in Figure 13. Since, however, children differ in the ages at which this cycle reaches maturity, some will be ready for reading before others. Under no circumstances, then, in view of the postulate, can the introduction of reading activities at one time to all children within the same grade be justified from an educational or a psychological standpoint. It must be said, however, that we know nothing about the relationships between

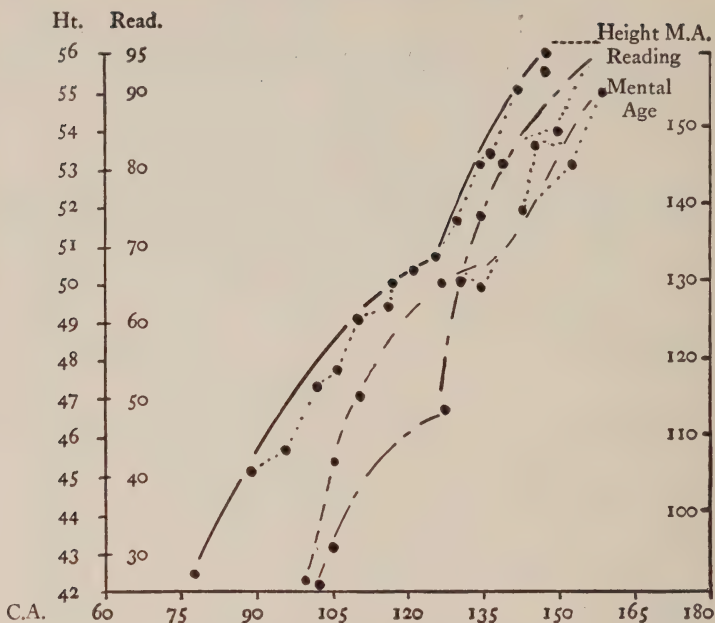


FIGURE 12. Case 31F (Millard)

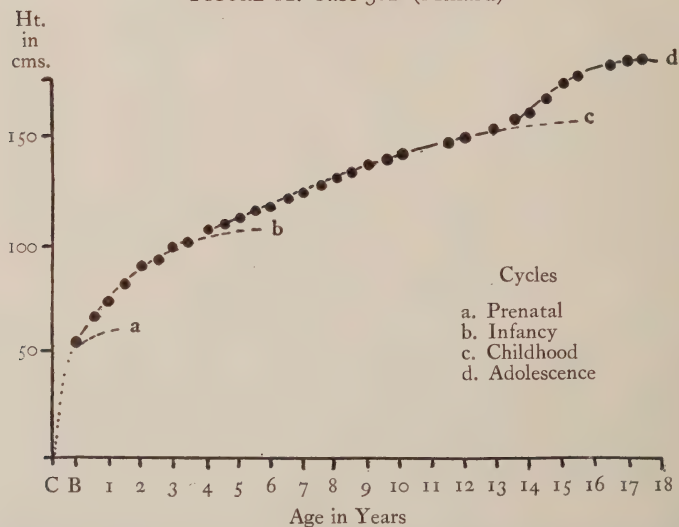


FIGURE 13. Cycles of Growth (Courtis). Growth of Individual Boy in Height from Birth to Maturity (Scammon)

the amount of physiological maturity required when reading can be properly begun.

In Figures 10 and 11, the cycle effect appears about the same time and in each phase of development. If this points out that all phases of growth and learning are universally affected by organismic changes such as occur at adolescence, then it would be safe to say that artificial teacher-pressures at plateau periods are wasteful, useless, and possibly harmful.¹ Certainly this would be a sensible view if we could predict that a plateau around twelve or thirteen would soon disappear and be followed by new learning levels. Readiness would then become related to cycle development.²

The cycle theory of growth has implications likewise for upper elementary and junior high school instruction. We know with certainty that when a child begins the second upward cycle he demands and needs activities and experiences related to his growing adolescent interests. This may probably be the proper time to introduce complex skills and broader fields of study.

If growth is interrelated, as individual data seem to show, then various phases of growth exist in a certain sequential arrangement or pattern. Organismic changes are known to affect the entire growth pattern. By determining ratios of development among various aspects of growth it would be possible to predict the moment when certain instructional procedures should be initiated. This scheme would be a great improvement over the present one for determining when reading should be introduced. Our current technique is to determine mental age; and if the mental age of the child is sufficient, then we assume the child is ready for formal reading. This method is not infallible. Sometimes it works and sometimes it does not. The explanation is that we do not know whether the desired mental age is representative of status or whether it is representative of an adequate

¹ Further unsolved problems are the relationship that one cycle of development bears to another, that is, whether one cycle begins when the former is completed or whether they overlap somewhat, and also whether such a relationship is general or whether it varies for individuals.

² From this point of view readiness should not be in the nature of activities attempting to hurry learning but rather in the nature of enriching the environment by way of experiences, natural interest development, and the like.

percentage of the child's maturity. Such are some of the implications of child growth study for programs of instruction.

A knowledge of basic growth concepts and of techniques for evaluating effects offers greater opportunities to curriculum makers than to any other group. Consecutive measurements of growth make it possible to compare the effectiveness of educational procedures from a new point of view; namely, how such procedures change the growth pattern of the child.

Studies already completed offer many ideas, which in the future are bound to change instructional policies. For example, certain studies in reading illustrate the fact that children are capable under constant conditions of reaching a certain defined maximum limited by their potentialities and their experiences. Excessive remedial teaching can bring only superficial results. The well-informed teacher realizes that to stimulate the child beyond his physiological-social level brings only temporary benefits. For example, all available evidence shows that reading should be introduced according to developmental needs and thus naturally and in accord with desire and interest. In such a procedure the achievement curve will follow the maturity curve, and the child's status at any time will be compatible with his maturity.

The teacher who follows the developmental pattern of the child as a guide for the introduction of instructional materials does not become alarmed because certain pupils progress at slower rates than others. Pressure should not be used to drive pupils toward unnaturally high standards. A knowledge of differences of the learning curves of individual children will point out that a pupil who appears slow at an early grade level may simply be immature and consequently have a late starting point. It is not unusual to find pupils who, in spite of pressure and assistance on the part of the teacher, have shown scarcely any indication of reading ability up to the end of the second grade. In some instances, without any apparent outside influence, these same pupils began to read and at the upper elementary grade levels outstripped others who began earlier but

progressed at a slower rate of learning. The uninformed teacher is often discouraged to find that children known to be intelligent show no permanent benefits from lengthy drill and remedial periods. These teachers have not yet learned that the real growth curve of the individual is but little affected by instruction for which the child is not ready.

SELECTED REFERENCES

1. BARKER, ROGER E., KOUNIN, JACOBS, and WRIGHT, HERBERT F. *Child Behavior and Development*. New York: McGraw-Hill Book Company, 1943.
2. BLANTON, MARGARET G. *Child Guidance*. New York: D. Appleton-Century Company, 1927.
3. BOYNTON, PAUL, and others. *Elementary Educational Psychology*. New York: Prentice-Hall, Inc., 1945.
4. BRECKENRIDGE, MARIAN E., and VINCENT, E. LEE. *Child Development*. Philadelphia: W. B. Saunders Company, 1943.
5. BRUCE, WILLIAM F., and FREEMAN, FRANK S. *Development and Learning*. Boston: Houghton Mifflin Company, 1942.
6. HURLOCK, ELIZABETH B. *Child Development*. New York: McGraw-Hill Book Company, 1942.
7. LEONARD, EDITH M., MILES, LILLIAN E., and VAN DER KAR, CATHERINE S. *The Child at Home and School*. New York: American Book Company, 1942.
8. PRESCOTT, D. A. *Emotion and the Educative Process*. Washington: American Council on Education, 1938.
9. PRYOR, HELEN B. *As the Child Grows*. New York: Silver Burdett Company, 1943.
10. STRANG, RUTH. *An Introduction to Child Study*. New York: The Macmillan Company, 1938.
11. *Fifteenth Year Book of the Department of Elementary School Principals, Michigan Education Association*. "Child Growth in an Era of Conflict." Lansing, Mich.: Michigan Education Association, 1944.
12. *Helping Teachers Understand Children*. Washington: American Council on Education, 1945.

3

School Organization for Growth and Learning

How SHALL the elementary school be organized in accordance with the principles of child growth and development? How do some of the outstanding current schemes for instruction check with our knowledge of how children grow and learn? What kind of organizational plans are necessary in order to take most advantage of growth in encouraging learning? These questions will not be answered one by one in this chapter; instead, they will serve as guides since they themselves are only a sampling of those that might be raised.

Let us begin by considering the purpose of organization in the elementary school. By so doing we can establish a criterion by which current schemes can be evaluated.

Those who have the responsibility for determining the type of school organization — and organization is most important since it determines the kind of instruction — should keep in mind above all else that organization is only a means to an end, a device to make possible the realization of instructional goals. Teachers' schedules, the selection of teachers, and all other organizational activities should be determined by the goals of instruction. Philosophy of instruction and philosophy of organization must parallel each other, for the latter takes its cue from the former. Schools which reverse this process become mere automata, with teaching regimented and the needs of the child ignored.

About the time educators first saw educational goals in terms of child needs, but when the latter were still rationalized instead of determined scientifically, innovations were

initiated in school organization. None of these were based on a knowledge of child growth and development, but nevertheless they did deviate considerably from traditional organization and undoubtedly paved the way for the type of school which is now emerging as a result of scientific study of child growth. The following plans are listed by Otto as significant steps in reorganization in accordance with mid-nineteenth and twentieth century philosophy of instruction.

TABLE I¹

VARIATIONS FROM THE USUAL TYPE OF ELEMENTARY SCHOOL ORGANIZATIONS, 1862-1932

<i>Plan or Practice</i>	<i>Person Associated with</i>	<i>Date of Establishment</i>
St. Louis	Harris	1862
Pueblo	Search	1888
Cambridge	Cogswell	1893
Elizabeth, N. J.	Shearer	1895
Portland, Oregon	Rigler	1897
Batavia	Kennedy	1898
North Denver	Van Sickle	1898
Santa Barbara Concentric	Burk	1898
Platoon	Wirt	1900
Burk's Individual	Burk	1913
Dalton	Parkhurst	1919
Winnetka	Washburne	1919
Detroit XYZ grouping	Berry	1919
Cooperative Plan	Hosic	1930

I. OUTSTANDING ATTEMPTS TO ADJUST ORGANIZATION TO INSTRUCTION

THE PLATOON SCHOOL. The platoon school had a rather long and popular sojourn in early twentieth century developments in school organization. It professed to serve the child rather than to be a means for better presentation of subject

¹ OTTO, HENRY J. *Elementary School Organization*. New York: D. Appleton-Century Company, 1934, p. 313.

matter. It was organized by Superintendent William A. Wirt of Bluffton, Indiana, in 1900. The idea of the "platoon" was that one group could be "working," while two other groups could be respectively "studying" and "playing." The so-called tool-subjects or fundamentals were to be taught in the home room, and the special subjects such as art, music, physical education, auditorium, library, science, manual training, and home arts were to be taught in special rooms. The plan probably influenced, more than any other development, the growth of laboratory and other types of special classrooms. After Superintendent Wirt transferred his idea from Bluffton to Gary in 1908, the plan gradually spread in modified form to forty-one different states, representing over a thousand schools in over two hundred cities.¹

THE WINNETKA PLAN. Although he is not generally known as the originator, the outstanding attempt to break away from the traditional graded elementary school was made in 1913 by Frederic L. Burk in the Training School of the San Francisco State Normal School. Because of certain legal technicalities, it fell to the lot of Dr. Carleton Washburne, one of Dr. Burk's associates and later Superintendent of Schools at Winnetka, Illinois, to bring full recognition of its possibilities to a world-wide audience. In taking over responsibility for the instructional program at Winnetka, he gave the name of the city world fame.

In the main the Winnetka schools have two divisions of the curriculum. One is called the "fundamentals" or "common essentials"; the second, the "group and creative activities." This plan, like the platoon school, places emphasis on the skill subjects by giving each a special place in the schedule rather than making them incidental to anything else. A report issued in 1925 stated² that each child

needs to know certain elements in arithmetic, needs to be able to read with a certain speed and comprehension, needs to

¹ CASE, ROSCOE D. *The Platoon School in America*. Stanford University, Calif.: Stanford University Press, 1931, p. 26.

² WASHBURN, C. "Burk's Industrial System as Developed at Winnetka." In *Twenty-Fourth Year Book of the National Society for the Study of Education*. Bloomington, Ill.: Public School Publishing Company, 1925, Part II, p. 29.

spell certain common words, needs to know something about those persons, places, and events to which reference is constantly made. Since every child needs these things, and since every child differs from others in his ability to grasp them, the time and amount of practice to fit each child's need must be varied. Under the old regime, in the effort to give different children the same subject matter in the same length of time, the quality of the children's work, the degree of their mastery, varied from poor to excellent, as attested by their report cards. But under the Winnetka technique of individual education, instead of quality varying, time varies; a child may take as much time as he needs to master a unit of work, but master it he must. The common essentials by definition are those knowledges and skills needed by everyone; to allow many children, therefore, to pass through school with hazy and inadequate grasp of them, as one must under the class lock-step scheme, is to fail in one of the functions of the school.

The Winnetka group, like many others, have turned to standardized test procedures for an evaluation of their program. Covering such aspects of instruction as age-grade placement, achievement of children in school, achievement of graduates, teacher costs, and teacher load, they have reported that the Winnetka schools are doing distinctly superior work. Let us hasten to add that this evaluation has been made entirely in terms of subject matter and that no equivalent attempt has been made to compare improvement in personality, character, and social adjustment with that attained by other schools. Furthermore nothing extensive has been done to evaluate achievement in group activities, cooperative efforts, or social development.

THE DALTON PLAN. Another plan of historic interest, known almost as well as the Winnetka plan, is the Dalton Laboratory Plan. According to Helen Parkhurst,¹

the aim of the Dalton Plan is a synthetic one. It suggests a simple and economic way by means of which the school as a whole can function as a community. The conditions under which the pupils live and work are the chief factors of their environment, and a favorable environment is one which

¹ PARKHURST, HELEN. *Education on the Dalton Plan*. New York: E. P. Dutton and Company, 1929, p. 29.

provides opportunities for spiritual as well as mental growth. It is the social experience accompanying the tasks, not the tasks themselves, which stimulates and furnishes both these kinds of growth. Thus, the Dalton Plan lays emphasis upon the importance of the child's living while he does his work, and the manner in which he acts as a member of society, rather than upon the subjects of his curriculum.

Subjects of study, as in the Winnetka plan, come under two classifications. One includes the academic subjects—reading, mathematics, physical science, spelling, grammar, geography, or whatever might be thought of in any school as the fundamental or skill subjects. The other includes what the Dalton people think of as the physical, the social, and the emotional, or what might in certain other schools be called the creative subjects. In the Dalton plan physical training, literature, nature study and science, the arts, and the like are given this connotation. Teaching of the academic subjects is individualized; the others are handled by group or class methods. In each grade the former are broken down into a series of related problems called “jobs” or “contracts.” As stated by Miss Parkhurst,¹

A single job may be the working out of a single idea or each job may be made up of a collection of correlated assignments of work. In a school where, say, five subjects compose the curriculum, if the work is to be arranged in jobs, work should be outlined in advance to cover a twenty day period and work sheets or procedure sheets (assignments) would be made out to show a pupil how to attack each subject. Individual copies of these work sheets (assignments) would be given to each pupil.

We speak of a “job” as comprising a certain number of “units” of work. A unit of work in quantity approximates, or corresponds to, what would usually be assigned for a daily recitation in a subject. Twenty units of work would be outlined for each subject taught. If a grade's curriculum had five subjects, then a job would comprise 20×5 units, or 100 units of work. A unit of work, from the pupil's point of view, is

¹ PARKHURST, HELEN. “The Dalton Laboratory Plan.” In *Twenty-Fourth Year Book of the National Society for the Study of Education*. Bloomington, Ill.: Public School Publishing Company, 1925, Part II, p. 87.

not a set amount to be done in a certain stated amount of time, nor does a unit of history, for instance, equal a unit of music or art. Pupils take as much time as they need out of the entire amount of time at their disposal, to do any given 20 units of work of an assignment.

MISCELLANEOUS EXPERIMENTS. There are many more experimental innovations than those listed in Table I and many more experiments attempting to bring about individualization in classroom teaching than those we have discussed. Among the latter are the Mount Vernon, New York, plan, ability-grouping in Detroit schools, and the differentiated assignment plan.¹ The principles involved all go back, in the main, to the general ideas of the three plans previously described.

All plans of this type developed along with the testing movement in education and reached their climax during the 1920's, when education was attempting to approach the administrative efficiency of "big business." That schools can be operated like a business enterprise is quite unlikely, since human beings rather than inanimate objects are dealt with. Children cannot be pigeon-holed or developed with just so much effort as can objects produced by factories. One simply cannot teach by production methods.

CORRELATION SCHEMES. Outside of its utter unwieldiness because of constant additions, another reason for looking at the enlarging curriculum with alarm was the idea that the child was being treated only incidentally in relation to the mounting number of subjects, and that as subjects increased in number, the child was given less and less attention. The arguments advocated by proponents of this view were that the child was going through school with the most diffuse and vague impressions of the relation of his subject matter to life, and that even when the number of subjects was reasonable in number, failure to synthesize the various fields of instruction contributed to their lack of reality in the youngster's mind. He studied reading, spelling, or geography without seeing that they existed or

¹ All these are described in detail in the *Twenty-Fourth Year Book of the National Society for the Study of Education*. Bloomington, Ill.: Public School Publishing Company, 1925, Part II.

could exist as a total pattern for understanding life and himself. According to this view pupils should be enabled to see the total pattern of school activity so that the connection of each subject with the others and with the whole of life would be clear and understandable.

In the attempts to reach this goal, several schemes have been developed. Among these are:

- (1) Correlation of English and social studies through projects and incidental relationships.
- (2) Correlation in one or two subject-matter areas.
- (3) Fusion or uniting of courses in areas, such as social studies, science, arts and crafts, etc.
- (4) An attempt to relate all subjects to a general theme uniting them all.
- (5) A program of instruction on a class basis but with all teachers responsible for teaching skills where needed.
- (6) Subject-matter organization of academic or fundamental subjects employing special teachers and special teacher areas as needed and on call.

Schools working in this direction have not developed specific patterns such as the Winnetka or the Dalton plan. Much experimentation is, however, still being done with the use of the sort of organization that has been mentioned.

II. WEAKNESSES IN TRANSITIONAL PROGRAMS

Even at their best both the programs based on individualization and the programs developing various schemes for correlating subject matter must be looked upon as transitional. Credit must be given them, however, for moving away from the old cut-and-dried pattern, particularly in their contributions to method and in their recognition of individual differences in capacity and in growth.

No finer analysis has been made of the systems previously described than that by Professor William H. Kilpatrick in 1925.¹ Our purpose in reproducing his critique is not to discredit the great contributions made by these earlier

¹ KILPATRICK, WILLIAM H. "An Effort of Appraisal." In *Twenty-Fourth Year Book of the National Society for the Study of Education*. Bloomington, Ill.: Public School Publishing Company, 1925, Part II, pp. 279-286.

developments, but rather to indicate the path to be followed if contemporary school organization is further to implement and complement the progress already made.

The essential error of the Dalton plan, then, is, as with all external examination schemes, that it accepts childhood as a time of storing up learning to be used when called for at a remote day, typically in adult life. It is on this assumed theory that it sets up its series of learning stints reaching upwards from the fourth grade. It assumes that a child can learn these successive stints and hold them stored up available for use when they shall later be called for. It further assumes that it does not hurt the child to be treated in this way. Both assumptions are here denied, at least to a degree to condemn the practice. But few things, comparatively speaking, can be so learned long in advance of use to stay with one till the distant use shall come. And the hurt, positive or negative, to the ordinary child when so treated is probably very great. In most schools the attitude of opposition to school, books, intellectual matters, to all standards advocated by teachers of all kinds, is as a rule very great, greater than many good people seem to realize. Under the Dalton plan, the positive hurt here is, as was pointed out, somewhat lessened by the greater child participation — possibly in certain matters altogether removed. But the negative hurt, the loss of opportunities that a better regime would bring, is probably greater under the more mechanical setting of stints than under the classroom regime. For class discussions, if raised above mere testing, can be made very educative. . . .

The term "the common essentials" is used at Winnetka to refer to the subject-matter content assigned for learning by "goals." By this Mr. Washburne means "certain knowledges and skills . . . needed by every child." That there are certain knowledges and skills which are needed by each child need not be disputed; but there are decided difficulties with the implications. First, it is implied that such an "essential" can be learned in isolation from its "natural setting" (to use Charter's term). This, it would seem certain, is only partially true. Second, it is implied that so large a body of such "essentials" can be definitely named. The more definitely this is tried, the further off does agreement seem to betake itself. Third, it is implied that "the common essentials" should consist exclusively of "knowledges" ("facts" were perhaps a better term) and skills. Surely this cannot be true. To leave out common

honesty and truthfulness from any list of "common essentials" is at once to queer the list. Why are they omitted? Is it that they are not needed? Certainly not. The reason they are omitted is that they do not lend themselves to assignment by "goals." In other words, the phrase "the common essentials" carries with it just a shade of rationalization. The content is chosen on one basis; a name that implies a better basis is then given. Not the "common essentials," but "some common essentials that lend themselves to self-teaching assignment" — these constitute the content of the first part of the Winnetka scheme. . . .

And now what is the conclusion regarding Winnetka's plan of learning by goals? First and foremost, it tends to break the child's learning into two disconnected parts. One part, highly mechanical, belongs to the system of goals — a system too nearly complete in itself, too little connected with life. Stated psychologically, the danger is that the learning will not transfer. Stated in terms of life, the danger is a divided self — that the child will look on learning as something to be "learned" and then put behind him. If it is to be rejoined that the freer class work at Winnetka counteracts this danger, the answer comes that the freer work does seem to be in far greater degree continuous with life, but the gap still remains between the individual drill work and the freer group work. The two parts of school do not connect, and unfortunately, in the whole discussion at Winnetka, learning by goals seems to be counted as the essential. The chosen term implies it, and it is only the time saved from the goal work that is available for the other. If further rejoinder be made that the children are happy, that they like not only the freer group work, but quite as well to work for goals, then we have to say that present happiness, though as good, can never be taken by itself as final. The question of long run effect must decide. That the Winnetka plan of goals is a better way of doing many of the things the ordinary school tries less successfully to do, may well be admitted. But unless the danger of little transfer and the danger of the divided self can be better safeguarded, the present writer, for one, does not believe that learning by goals will continue to hold its present prominence at Winnetka.

At best, correlation and fusion schemes of subject matter were developed as a compromise program. Principals, superintendents, and curriculum directors believed that correla-

tion represented an opportunity to answer the criticisms of the progressive group regarding the typical subject-matter offering as well as to satisfy those who leaned toward retaining subject-matter divisions.

In some instances, certain correlation schemes represent a worthy attempt to bring about better relationships between subject-matter areas, but in most instances they have degenerated into nothing more than a spurious or superficial gesture toward instructional improvement. Correlation has too often represented the naming of a course, whereas the actual teaching under that name has consisted of budgeting time and then teaching the usual subjects according to that budget.

Still another criticism of these schemes is based upon the psychological implications involved where a correlated or fused program is actually carried into operation. Let us review an actual situation in which such a program was fairly well worked out. The development of correlated programs in a certain school resulted in breaking down the long list of specific subject-matter offerings into the following divisions, each including several previously separated fields of study. The new fields were called: (a) language arts, (b) arts and crafts, (c) social science, (d) exact sciences (mathematics and science), (e) health and physical education. All the teachers in these correlated fields were most anxious that their individual efforts prove effective, and consequently they applied every possible technique to gain success. And, as a matter of fact, each teacher was quite successful. Projects were developed in all divisions, interesting activities were unfolded, and much creative and research energy was expended. This was all very good as far as the school administration was concerned. From the point of view of the child, however, the situation was very different. The same pupils participated in all phases of the program. A child working in the social studies moved to the arts and crafts area. After completing his stint in arts and crafts, he went to language arts and from there to the next area and so on. Each child, moving from area to area, found his interests challenged at every turn through the school day. So many motivations were provided, so many interesting leads were

developed in school that none stood out. Because of his inability to find dominant interests carrying over into his leisure time, he had no opportunity to explore fully any one interest. Further, the program overstimulated the children, with resulting evidences of tension and increasing over-expenditure of energy as the school year rolled on toward its completion. Mental and physical records presented definite corroboration of this observation. Such correlation schemes definitely obviate the possibility of broad, over-all planning and appraising programs on the part of the child. Each area provides him with so many stimuli that his responsibility becomes mainly that of "choosing," which, psychologically, is quite different from that of "exploring." Or, our criticism may be stated in another way: correlation programs provide plenty of mobility in terms of subject-matter divisions but lack flexibility enough to respond to child needs except within areas of consolidation.

With all their shortcomings it must be admitted, however, that correlation techniques have represented a necessary stage in program evolution. Only through the idea of subject-matter integration has the concept of child integration come about. Correlation plans have also given teachers experiences in developing personal initiative in the organization of subject matter and thus freeing themselves from the fear that usually follows abandonment of courses of study and of textbook outlines.

III. PROMISING CONTEMPORARY THINKING ON ORGANIZATION

A hint as to what might be expected in the development of a program closely related to the best philosophy and psychology of growth and learning appeared in 1925, in a statement by Kilpatrick in the course of his discussion of the socializing aspects of the Winnetka system. He says:¹

It is a pleasure to commend the socialized work. Here there need be no divided self. Continuity with the rest of child life is possible. Here can be got the learning "through experiences

¹ KILPATRICK, *op. cit.*, pp. 285-286.

of normal living" presented by Professor Bobbitt, with its emphasis upon "spontaneous, voluntary, and self-directed work." Could we make this the main part of the school? And if so, what about the needed facts and skills? Mr. Courtis' answer seems to point the open way: "An ideal of two parts: (1) a series of social projects in which there would be need for the use of fundamental skills in meaningful situations, and (2) a series of self-instructive, self-appraising practice exercises so closely correlated with the project work that children could avail themselves of drill exercises as they became conscious of the need." It is most interesting to see here represented both features of the Winnetka plan, with the emphasis reversed. In this, first things come first. Will it work? The present writer believes yes. Once we understand how few drilled facts and skills we really need and how few of desirable outcomes can be got by separate drill, we shall find the task much easier. Collings' remarkable success with both skills and attitudes shows at least what a rural school can do, once we apply both faith and effort. The various experiences described in this study increase one's faith.¹ The second feature at Winnetka, with the first duly subordinated,² holds much promise for the future.

... we must have both individualized work and group work. But we must revise the common notion of what constitutes the school's task. Education is not acquiring specified subject matter in advance; it is the continuous remaking of life by acquiring subject matter as it is needed for present behavior. When we can see this and can understand the necessity for the unity of selfhood, then we shall see why drill, though necessary, must be subordinated to life — why the school, to be finally satisfactory, must be continuous with life.

Rugg has presented what we believe to be very challenging thinking on program organization.³ He proposes what he calls six "strands" upon which we must depend for understanding our economic and social system and for the rounded growth of the individual.

¹ COLLINGS, ELLSWORTH. *An Experiment with a Project Curriculum*. New York: The Macmillan Company, 1923. A similar point of view is expressed in LANE, ROBERT H. *The Teacher in the Modern Elementary School*. Boston: Houghton Mifflin Company, 1941.

² Subordinated and related.

³ RUGG, HAROLD O. *The Great Technology*. New York: The John Day Company, 1933, pp. 266-268.

1. *The life of the school as a whole*: the work of councils, committees, assemblies, organizations — groups of all kinds. In the mass school these activities (such of them as exist) are generally called “extra-curricular.” In the new school, they constitute the very heart of the curriculum itself.

2. *Body education*: an integration of informal physical play activities with the dance, music, pageantry, and the like. In every real way these activities should constitute the very base of the whole scheme. . . .

3. *The study of man and his changing society — the new social science*: This is the intellectual core of the organized program. It is the “social science” of the new school, plus some materials and activities which are sometimes grouped in English literature and science. The direct first hand study of community and national life and world affairs is included. . . .

4. *Introduction to creative and appreciative arts*.

5. *Creative work period*: Taken together these two (4 and 5) constitute the second great central strand of the new program of work. They develop parallel to the study of man and his changing society by contributing the appreciative and creative aspects, while the former contribute primarily to the problem of tolerant understanding. Really the two should be designed together.

The introduction to creative literature and the fine arts, like the introduction to changing cultures, would aim primarily at an appreciation of the contemporary arts, but would make much use of history. Especially would it emphasize the emergence of important creative movements after 1900. It would make much use of such strands as (1) American civilization as revealed in its changing architecture; (2) the rise of the American theatre; (3) creative writing — poetry, fiction, essay — in each of the principal stages of American world history; (4), (5), (6), (7), similar strands dealing with painting and sculpture, music, the dance, the handicrafts and industrial arts. In the light of study of these historical strands, there would be prolonged consideration of the state of the creative and appreciative “minds” of America and their reconstruction through the reconstruction of education. . . .

6. *There are two minor strands called, respectively, “Introduction to the physical and natural world” and “Introduction to human behavior.”* Each is less extensive in scope; the first is confined to the junior high school, the second largely to the senior high school. The latter is of very great importance and represents a new integration of material. It might embrace the

study of such matters as the following: biological foundations of human behavior; integrative action of the neural-muscular-glandular system; habits, and individual and social behavior; defensive mechanisms; topics dealing with nutrition and health, problems of mental hygiene; character formation; individual differences in various traits; language and social development; influence of face-to-face groups and agencies of communication on the formation of personality; the American climates of opinion — how formed, controlled, and changed; propaganda, censorship, attitudes, opinions, stereotypes; leadership; authority; and the crowd.

Many more “essentials” could be cited as requisites for the modern integrating program.¹ The few examples quoted illustrate certain uniform trends. Whether these program essentials were arrived at by analysis, by experimentation with different kinds of programs, or by application of knowledge of child growth in a given school, there is a similarity between the elements in recent school reorganization. Common requisites are as follows:

1. Longer periods are essential. Functional, integrated projects or activities cannot be carried out successfully in a twenty-, thirty-, or even forty-minute period.

2. All writers, thinking of the school as a device for developing democratic ideals and a democratic way of living, are agreed that time should be provided for those uncharted activities growing out of the child's relation to the school as a social environment. Whether these be what has formerly been thought of as extra-curricular, whether they be committee meetings, planning activities, personal research and study, all are agreed that time should be provided for them.

3. All experts and writers emphasize group activity as a means for developing social understanding and individual and social relationship.

4. All point out the need for a less formal program, with fewer time divisions of the day.

¹ See such books as LEE, J. MURRAY, and LEE, DORRIS M. *The Child and His Curriculum*. New York: D. Appleton-Century Company, 1940; MACOMBER, FRANK G. *Guiding Child Development in the Elementary School*. New York: American Book Company, 1941; and BURTON, WILLIAM H. *The Guidance of Learning Activities*. New York: D. Appleton-Century Company, 1944.

5. All show definitely a tendency to bring the many subject-matter divisions into a closer relationship with one another.

6. Time for creative activity, broad reading, and research projects, either growing out of a larger field as pointed out by Rugg or purely as a personal expression, seems to be a requisite in all the statements quoted.

IV. SOME EXAMPLES OF PROGRAM PLANNING

It is difficult to pick out individual programs that exemplify all the above principles. The ones we shall cite are representative of schools that are trying to apply knowledge of research in child growth and development to school organization.

I. GRADE ONE. The first two examples show larger subject-matter blocks, provision for interplay and development of individual interests, some consolidation in the language arts (language, writing, reading), and elimination of any formal number activity. With the exception of number work, all the conventional subject matter of the first grade is included.

CLASSROOM PROGRAM FOR FIRST GRADE¹

<i>Time</i>	<i>Description of Activity</i>
8:45	Free activity — for individual projects and problems — care of pets, plants, etc.
9:30	Language Arts — Language, writing, discussion (speech). Planning and incidental reading.
10:15	Recess — milk
10:30	Reading, phonics, work-study, and games; arranged according to group and individual need.
1:00	Reading according to grouping — alternate groups go to gymnasium.
1:45	Recess
2:00	Singing, story hour, etc.

¹ MOORE, ANNIE E. *The Primary School*. Boston: Houghton Mifflin Company, 1925, p. 37.

2. ONE-TEACHER SCHOOL. Our second example shows the program recommended by the Arkansas State Department of Education for one-teacher rural schools.¹

<i>Periods</i>	<i>Grades</i>				
	<i>1</i>	<i>2</i>	<i>3-4</i>	<i>5</i>	<i>6</i>
<i>Opening Exercises</i>					
1	Conference period for teachers and pupils to plan for units of work based on separate but related centers of interest. Grades 4-5-6 may work as one or two groups; grades 1-2-3 may do seat work if they are not contributing to a unit.				
2	Arithmetic: black-board exercises or seat work	Number work in group procedure. Use pupil helpers from higher grades for drills and checking when possible		Arithmetic: check and clear up difficulties	
<i>Recess</i>					
3	Language Arts: seat construction work and written language drills, spelling			Language Arts: language, spelling, writing	
4	Read with teacher guidance	Read with teacher guidance	Seat work: read with teacher guidance	Independent work: reading	Independent work: reading
5	Free period: creative work, examining books, appreciation reading, except when contributing to unit conferences			Group-teacher conference for summaries, evaluating, and diagnosis on units for both groups considered jointly	

¹ *A Teacher's Guide for Curriculum Development* (Bulletin No. 3). Little Rock, Ark.: State Department of Education, 1932, p. 291.

<i>Periods</i>		<i>Grades</i>				
		<i>1</i>	<i>2</i>	<i>3-4</i>	<i>5</i>	<i>6</i>
6		Blackboard and seat work or construction, as building, collecting, etc., out of school room. When possible use pupil-leaders for out-door work, not supervised by teacher			Group-teacher conference for summaries, evaluating, and diagnosis on units for both groups considered jointly	
7	<i>Monday</i>	<i>Tuesday</i>	<i>Wednesday</i>	<i>Thursday</i>	<i>Friday</i>	
	Music: vocal- instrumental or appreciation	Health	Creative expression, art expression	Health	Clubs: Hi-Y Reserves, 4-H, Scouts, nature study, story telling	

This program shows a great reduction in subject-matter areas from those usually found in the rural school. The type of program it represents is that of subject-matter consolidations rather than a grouping around a central theme which tends to integrate skill and social activities. The skills can be based on needs as they come to light in the project and group activities, and are not necessarily disconnected.

There is a great amount of individual freedom in this program, and the utilization of older pupils provides a fine educational scheme for developing understanding of children by children.

3. INTERMEDIATE GRADES. The following program has been recommended by the California State Department of Education for use in the intermediate grades. Such a program contains many ideas which are applicable to grades three to eight inclusive.

A DAILY PROGRAM FOR INTERMEDIATE GRADES¹

<i>Time</i>	<i>Monday</i>	<i>Tuesday</i>	<i>Wednesday</i>	<i>Thursday</i>	<i>Friday</i>
9:00	Informal greetings, routine matters, exchange of ideas, music, reports of interesting events, designed to give the teacher an opportunity to observe each child and to give children the chance to express those things in which their interest is great.				
9:15	Social studies and nature study. Informal reports of committees or individuals as to progress of their enterprises. Evaluation of work done. Plans and discussions of the work of the day. Appointing of committees, attention to the arrival of new material such as books from the library, material brought in by class members, notices on bulletin board about subject at hand. Construction work, art work, research work done by groups or individuals as planned; oral reports. Language arts and reading cannot be divorced from social studies and nature study.				
10:30	Healthful living — health and physical education and free play. Nutrition program and rest period for those who need it.				
11:10	Language arts — oral and written expression, spelling, and handwriting skills and practice through writing and presenting plays and puppet shows, writing stories or poetry, reporting for school newspaper, preparing reports for social studies.				
12:00	Lunch, rest, and directed playground activities.				
1:00	Arithmetic enterprises — individual instruction. Establishment of fundamental skills should be the purpose.				
1:40	Music skills, appreciations, and rhythms				
	Harmonica bands, orchestras, glee club	Club meetings, use of auditorium, committee meetings	Creative abilities may be a part of work under way in social studies, special interest as pottery, weaving, or other craft work, or fine arts	Library period (2 days a week)	

¹ *Teachers' Guide to Child Development in the Intermediate Grades*. Sacramento, Calif.: State Department of Education, 1936, p. 34.

<i>Time</i>	<i>Monday</i>	<i>Tuesday</i>	<i>Wednesday</i>	<i>Thursday</i>	<i>Friday</i>
2:20	Reading activities — reading groups on the basis of ability. Remedial work for children with special disabilities. Free reading period. Reading research for enterprises in language arts, social studies, or nature study.				

The California program provides maximum elasticity and goes a long way toward coordinating all school activities with the life of the child. The social studies area is ostensibly the core around which the remainder of the program is developed.

4. PRIMARY SCHOOL. The program shown below makes for "informality, individual attention to each child from the teacher, and a socializing influence among the children."¹

<i>Time</i>	<i>Activities</i>
8:30	Personal greetings, disposal of wraps, exchange of news of the day, and care of the room; specific planning for the day when necessary. Children go to interest centers.
9:00	Social living and manipulative activities. Each child works on his own problem, usually one relative to the major area of experience. The teacher moves about, helping and advising or suggesting to the individual child as he may need guidance, but not in any way controlling the situation. Near the end of the period a few minutes should be given for cleaning up and putting things in order. There should be a place for everything, and enough time should be allowed the children in which to put "everything in its place." Then they are ready to take this finished or unfinished work to the group gathering, where they evaluate the work done. Suggestions, constructive criticism, and questions are given by all in a group discussion, followed by a general planning for the next day. What is the problem, why it is to be done, what materials are to be used, what groups will work together, what is each child's responsibility?

¹ LEONARD, EDITH M., MILES, LILLIAN E., and VAN DER KAR, CATHERINE S. *The Child at Home and School*. New York: American Book Company, 1942, pp. 397-398.

<i>Time</i>	<i>Activities</i>
10:00	Recess and lunch hour, which is a time for happy social experiences with food served attractively and ceremoniously, even if it is nothing more than a portion of an apple. (Many school systems serve milk and crackers at this time.) Following this, there should be a relaxation period, with rest on mats, if possible; the rest period is very important.
10:30	Reading — all groups (self-directed activities).
11:30	Language arts — numbers — grouped around central thought of area of experience.
12:00	Noon intermission.
1:00	Interrelated activities of an aesthetic nature — literature, dramatization, music, art — grouped around major areas of experience.
2:00	Recess and physical education.
2:30	Program variation, with emphasis on activities which need stressing.
3:00	Dismissal.

5. ALABAMA ELEMENTARY PROGRAM.¹ According to the Alabama outline, the work to be accomplished during the school day is organized around (a) experiences in social living, (b) knowledge and skills, and (c) appreciations and recreations.

GRADE ONE

<i>Time</i>	<i>Activities</i>
8:30	<i>Opening Period:</i> Workshop and activities based on the social living unit; cleaning up period. In the opening period the children come in naturally, greeting each other and the teacher as they do so. They place wraps, hats, and lunches in proper places. A short time is spent in talking over what

¹ *A Guide to the Improvement of the Curriculum* (Curriculum Bulletin No. 5). Montgomery, Ala.: State Department of Education, 1939, p. 283.

TimeActivities

8:30 was done the day before and what each is planning for the day. After this each child goes to his work. This results in groups and individuals working at different things about the room. When a child finishes his part, he amuses himself at the piano or victrola, with toys or books, in drawing, dancing, or playing games. Near the close of the hour the teacher takes her seat and the children know it is time to clean up and join the class for a check up. After everything has been put in place, the children gather in a circle around the teacher and together discuss and evaluate their work.

9:30 *Related Reading and English Expression:* Activities during this period take a variety of forms — dramatization, a game, informal discussion, the reading of a poem or story followed by expression from the children. The poem, story, or discussion may relate to the larger unit upon which the children are at work. A common way of beginning is a discussion, and the subsequent writing down (by the teacher at the children's dictation, on the blackboard or chart) of what has been done during the activity period. The chart is later used for a reading lesson. If a booklet is made, this may become a part of the library.

10:00 Mid-morning Lunch and Recess.

10:30 *Related Reading and English Expression (cont'd):* The work continues very much the same as indicated in the first reading period. There may be dramatization, story telling, or discussion of pictures. These activities may or may not be related to the unit of work. The morning's chart of work should be reviewed; from it a class dictionary should be compiled. Before the children leave the room, they should put everything in place — chairs, tables, desks, and all work materials. Sweeping, straightening, and like routines are done by committees elected by the children. The room should be left clean and orderly. The careful working out of these routines, and the students' voluntary participation in them, tend to develop right habits and attitudes in the children as well as to insure an atmosphere of orderliness.

11:30 Noon Lunch Period.

Time	Activities
12:00	<i>Rest Period:</i> Each child has a simple cot or rug. At a given signal each child gets his cot, opens it at his customary place, and lies down. The teacher also relaxes. Soft music is played by the radio. At the end of the rest period each child replaces his cot and folds his blanket. When cots are not available, rugs (of rags, corn shucks, or burlap), heavy paper boxes, or auditorium chairs placed together may be used. Care should be taken that children are not in a draft. Rest equipment has been made in some places by N.Y.A. and W.P.A. labor, materials being furnished by the county board of education or through civic organizations.
12:30	<i>Appreciations:</i> Sometimes the teacher reads stories (cooperatively selected) at this period. For music appreciations, a victrola with a few records of music suitable for young children and played often is effective. On other occasions the period is given to drawing, crafts, painting, music, rhythms, reading for fun, and original stories or poems told or written. Very simple rhythms — walking, skipping, hopping, folk dancing — bring satisfaction, and provide for large muscle coordination.
1:15	<i>Supervised Play Period:</i> The teacher guides the children in choosing and playing outdoor games. Indoor games, such as dominoes, checkers, authors, puzzles, or anagrams are always in readiness for bad weather or those children who for any reason should remain in the school room. No period is richer than this in opportunities for learning the environmental background and social and emotional attitudes of the children.
1:45	<i>Skills and Techniques:</i> The teacher, having noted individual weaknesses during the morning, now gives remedial work in reading, writing, arithmetic, and spelling. Instruction may be individual or in groups, according to the needs of the children.

The following schedule represents the Alabama attempt to picture the organization for an upper elementary grade. It should be noted that in its pattern it follows the same outline as that for Grade One.

GRADE SIX¹

Time	Activity
8:30	<p><i>Work Period for Social Studies:</i> The first few minutes are spent in greeting, inquiring after the sick, discussing news, and planning for the day's work. One child is absent on account of illness, and it is suggested that the class write a letter to him. The class elects one to do this. The letter is to be written, and later in the day, during the drill period, read to the class.</p> <p>Each child goes to the work which he has planned to do in the unit. Some have unfinished tasks; others are just beginning some project. A group in one corner is constructing a model of a house or a locomotive. Another group is working with a frieze showing homes or some phases in the development of transportation. At this particular time the three children in this group are searching through histories and other books for a picture of an Indian home or canoe. Another group is working up a report on some discovery or invention. They are busily reading in encyclopedias and histories. The children themselves have selected and taken these books from the case. One of the group is still at the shelves in search of materials. After the students have read enough, they plan to write a report and afterward to construct a model. Individuals are working with soap and clay in making models or reading for special reports. At the end of the period, work stops at a given signal, materials are put away, and the pupils seat themselves at the front of the room. Then follows informal discussion concerning the work each has done or plans to do. One child is especially interested in some event or discovery and wants to begin work on it as a special project the next day. At an individual conference, the teacher discusses this with him, suggesting where he can find materials. She mentions that more than one person may be needed in the work and asks him to select his helpers. During this period the children are free to discuss their projects with each other, and to get materials. The teacher goes from group to group, commenting and suggesting.</p>
10:00	<p><i>Related Reading and Language Arts:</i> The work of this period is closely related to the unit. This period may be used for correcting common grammatical errors that have been</p>

¹ *A Guide to the Improvement of the Curriculum* (Curriculum Bulletin No. 5). Montgomery, Ala.: State Department of Education, 1939, pp. 61-64.

Time	Activity
10:00	revealed in oral and written work. There may be words that were misspelled or new words needed in the previous activities. They are given special attention. Reports prepared in the first period may be read, discussed, and corrected. Selections from different sources related to transportation are read or reported. This is after interest has been created by a synopsis of the story. A group is writing a play about transportation. Later this will be presented as a public program.
10:45	<i>Supervised Play Period</i>
11:15	<i>Skills and Techniques:</i> See second period above.
12:00	Lunch
12:30	Rest
1:00	<i>Appreciations:</i> These include reading for pleasure, poetry, art, music, and other aesthetic activities. On certain days of the week the children sing for pleasure old favorites or new songs. They are also taught to read music. Pictures are studied. The pictures may or may not relate to the unit of work. At least, a few selections from masters should be used. To build standards, the best work in construction or painting done in class is discussed as to perspective, proportion, line, and coloring. Rhythms may be taught. This period offers opportunity to bring in folk lore in music or story.
2:00	<i>Skills and Techniques: Arithmetic, Formal Language, Penmanship, Spelling, Remedial Reading.</i> The first item is the letter to the sick boy which has been written by a member of the group. It is written on the board, discussed for form, expression, and formal grammar. It is rewritten, if the class so decides, before being sent to the absent pupil. The regular text books are used in this period. Instead of drawing into the unit of work necessary drill on the skills, though incidental helps will be given, the teacher takes them up here. Some of the work such as spelling will be needed by the whole grade. Most of the work has to do with special deficiencies. One group needs extra work with pronunciation, word getting, vocabulary building. The teacher has a work type reading lesson with one group. Some children do not need this special drill in reading, but do need information in geography, history, or arithmetic, painting, or drawing

<i>Time</i>	<i>Activity</i>
2:00	started in the same work period; some prefer to read for pleasure. One group during this period is given very easy work in addition suited to their needs, but not up to traditional sixth grade standards. Checking comes immediately after the work is done. The teacher guides the pupils in checking their own errors, some more competent pupils being used as helpers. The teacher for the most part goes from group to group, and from person to person, helping only on special needs.

In addition to the earlier example of rural school organization,¹ the Alabama recommendation is here included along with guiding principles.²

1. In the one-teacher school, all pupils from grades three to six can be grouped for work on the experience unit, each individual working at some task at his level and according to his own abilities and interests.

2. All grades can be grouped for some of the work in appreciations, such as music, art, story telling. Individual interests and abilities should be especially considered; for example, the child who is good in drawing should receive encouragement and stimulation to do something which represents his best. No set standards should interfere with his individual development.

3. Especially important is the period of planning for the work of the succeeding school day, if the other children are to carry on a worthwhile program without a great amount of supervision from the teacher. During the last period of the day plans should be discussed and written on the blackboard for the guidance of the pupils the next day. The teacher and the children must plan their work ahead. The effectiveness of the entire program depends upon this planning of activities.

4. The recreation period should receive careful attention when the day's work is being planned. This period is very rich in learning possibilities. The more mature children will have opportunities for assuming responsibility in directing and assisting the younger children in their recreational activities.

5. Rest periods should be frequent. A half hour period for relaxing, when children and teacher lie down if possible, means much to the physical and mental condition of the child. Play corners should be provided for use, not only during rainy days, but when tasks are finished. The older children can be helpful in guiding groups of younger ones in both work and recreation.

¹ See above, page 61f.

² *Op. cit.*, pp. 63-67.

A ONE-TEACHER SCHOOL

Time	Activity
8:30	<p><i>Opening Period:</i> The health needs will be observed informally by the teacher as the pupils come in, greet the teacher, and linger for a word with her. Simple exercises follow. They may consist of group singing, oral reading of poetry, story telling, news items, or a short scripture reading. Absentees are recorded and plans are made for writing notes, when occasion demands, to absent members of the class, or to individuals or organizations for favors or services.</p>
9:00	<p><i>Units in Social Studies:</i> The pupils of all grades, except the first and second, work on the units. Plans for the day's work on the unit, written on the board the day before, are briefly reviewed. The children are grouped according to their interests and abilities, rather than by grades. In some situations it may be better to group the children by grades. The textbooks in geography, history, reading are used as reference books along with the library books. The activities are varied. One group may be drawing, another constructing, and another working up a special paper or report. The teacher and some of the advanced pupils have examined various books and other sources for materials bearing on the unit. At the proper time some pupils will write references on the blackboard or post them on the bulletin board. At the end of this period the results of the group activities are shown and evaluated.</p> <p>Grades one and two have free reading during this time. They group around the reading table, which contains a variety of easy and attractive books. An older pupil may be allowed to assist them in selecting books, pronouncing words, or such other ways as may be desired.</p>
10:15	<p><i>Play Period:</i> All children and the teacher go to the playground. The older children, with the help of the teacher, take responsibility for directing the play of the young children. Committees may be responsible for planning the program.</p>
10:45	<p><i>Drill Period for Lower Grades:</i> A short planning period is held. The teacher sees that each child and each group has in mind what is to be done. The older children continue work begun in the unit period, or prepare for the drill work later in the day. Direct teaching is done as needed for grades one, two, and three, in reading, spelling, writing, and arithmetic. For this work the lowest grade comes first, followed by the</p>

Time

Activity

10:45 others in order. Self-helps have been prepared for individuals and for small groups with common difficulties. While the teacher works with the pupils in grade three who need it in a study type reading lesson, pupils of grades one and two may be seated in small groups studying number combinations. Drill cards prepared by the teacher make for effectiveness. These groups may be working together on words which they need to spell. Grade one may do free reading at a library table, or by the use of phrase cards they may drill each other in reading. Pupil-teachers assist these groups. The first grade children go to the play corner when they finish their work.

The children of grades four, five, and six continue with work which grew out of the unit period. It may be reading for a special report, writing up a report, or writing letters to be used with the project.

At this period each day a small group is preparing lunch. They set the table, prepare soup, vegetable, or whatever else is to be cooked. The teacher has planned carefully with the group the day before for these duties.

At the end of the period the groups which worked independently report and show what has been accomplished. Materials are put away carefully, the children wash their hands and go to lunch. By noon the teacher has finished the direct teaching for the younger children.

12:00 *Lunch Period:* The children go to the toilet and then wash their hands and get ready for lunch. While eating their lunches the children listen to music provided by the phonograph, or engage in pleasant conversation, not forgetting their table manners.

12:45 *Rest Period:* Children and teacher may lie down on cots, on newspapers, rugs, or cardboard placed on the floor.

1:05 *Drills and Skills for the Upper Grades:* After lunch the children of grades four, five, and six have direct teaching of reading, writing, formal grammar, and arithmetic. If the third grade did not have arithmetic during the period before dinner, it will come at this period. The needs which have appeared in the unit, as well as other lacks in the fundamental skills, receive attention. The pupils are grouped according to their specific difficulties. One group will need special drill on addition combinations; another on fractions.

Time	Activity
1:05	If some of the fourth grade children do not need the work type reading lesson, they will do something else during this period. Individual lists of words misspelled in written papers and reports from the work on units are used as a basis for drill. Younger children may draw, construct, or read for pleasure. A pupil-teacher is used to help them. Some pupils in groups of two or three may drill each other in arithmetic or in reading by use of work cards. The only requirements are that they do not interfere with other work going on in the room.
2:15	<i>Appreciations:</i> All the children have appreciations together. Pupils may read poetry, hear music, sing, study pictures, or read for pleasure. Dramatics or special programs may be planned or rehearsed.
3:00	<i>Clean-up, Check-up, and Planning Period:</i> The materials are put away and necessary cleaning is done. After needed discussion, the plans for the next day are written in brief form on the board. The older pupils have this for guidance the next day, permitting the teacher to work with the younger children.

V. IN CONCLUSION

Educational administration is valueless unless it is translated into improvement of growth of the whole child. It is with the child as a unified, searching, adjusting organism that organization should concern itself. This chapter has attempted to show how schools can more nearly translate growth knowledge into practice no matter what the size of the school or the equipment and materials available. Instructors in one-teacher schools teaching all ages of elementary children can plan programs that will be functional, unified, and adjusted to life needs just as well as can teachers who are located in metropolitan centers and hence have only one age-group. Neither should lack of certain equipment be a bar, because the environment itself can be made to yield almost anything needed. All that is really required is an informed teacher with a desire to serve as guide and adviser rather than dictator and taskmaster, and a group of normal,

purposive, seeking children. All else can follow if these two factors are present and are given an opportunity to function.

Many different types of plan have been attempted at various times. One of the first was the platoon type of organization. Perhaps its greatest contributions were its provision for laboratory periods, its attention to auditorium activities, and its inclusion of playground periods in the time of the regular day. Actually it often became formalized in practice, stressed piecemeal instruction, and featured marching children from room to room at frequent intervals.

Although usually credited to Dr. Carleton Washburne, Dr. Frederic Burk was the real originator of the well-known Winnetka Plan. Probably its principal contributions were attention to individual needs, allowing a child to progress at his own rate of speed, and provision for a long period of group activities. Little effort was made to correlate subject-matter fields or to teach through projects or units covering broad areas of human endeavor.

The Dalton Plan also provided for individual differences in subject-matter achievement and for group activities as well as for the so-called "essentials." Like the Winnetka Plan it was essentially subject-matter centered with little attempt to promote the growth and adjustment of the whole child. It was pupil centered to the extent that the child accepted contracts for given amounts of subject matter which he could complete at his own inclination and speed. All the time could be spent on arithmetic, for example, until that contract was completed; and then the youngster had to turn his attention to contracts in language, social studies, and other subjects. On the other hand, he could work the contracts all along together by allotting a certain amount of his time to each area.

More recent trends stress large areas of human endeavor rather than piecemeal training. This is done by projects or contracts which develop desired attitudes, emotions, and habit formations as well as progress in the skill subjects. Or it may be done by allotting time to such large areas as body education, social life, creative work, skills, etc.

Whatever plan is adopted depends for its success on an enlightened, well-trained teacher. A good teacher can make

any plan work; a poor one could not succeed with the best that teaching skill has been able to devise.

SUGGESTED REFERENCES

1. BURTON, WILLIAM H. *The Guidance of Learning Activities*. New York: D. Appleton-Century Company, 1944.
2. CASE, ROSCOE D. *The Platoon School in America*. Stanford University, Calif.: Stanford University Press, 1931.
3. COLLINGS, ELLSWORTH. *An Experiment with a Project Curriculum*. New York: The Macmillan Company, 1923.
4. LANE, ROBERT H. *The Teacher in the Modern Elementary School*. Boston: Houghton Mifflin Company, 1941.
5. LEE, J. MURRAY, and LEE, DORRIS M. *The Child and His Curriculum*. New York: D. Appleton-Century Company, 1940.
6. LEONARD, EDITH M., MILES, LILLIAN E., and VAN DER KAR, CATHERINE S. *The Child at Home and School*. New York: American Book Company, 1942.
7. MACOMBER, FRANK G. *Guiding Child Development in the Elementary School*. New York: American Book Company, 1941.
8. OTTO, H. J. *Elementary School Organization*. New York: D. Appleton-Century Company, 1934.
9. PARKHURST, HELEN. *Education on the Dalton Plan*. New York: E. P. Dutton and Company, 1929.
10. RUGG, HAROLD O. *American Life and the School Curriculum*. Boston: Ginn and Company, 1936.
11. ——— *The Great Technology*. New York: The John Day Company, 1933.
12. *A Guide to the Improvement of the Curriculum* (Curriculum Bulletin No. 5). Montgomery, Ala.: State Department of Education, 1939.
13. *A Teachers' Guide for Curriculum Development* (Bulletin No. 3). Little Rock, Ark.: State Department of Education, 1932.
14. *Teachers' Guide to Child Development in the Intermediate Grades*. Sacramento, Calif.: State Department of Education, 1936.
15. *Twenty-Fourth Year Book of the National Society for the Study of Education*. Part II: "Adapting the Schools to the Individual Differences." Bloomington, Ill.: Public School Publishing Company, 1925.

4

Teaching for Growth and Learning

IN THE previous chapter we have illustrated at considerable length the ways and means by which school organization can be made compatible with principles of growth. It is the purpose of the present chapter to point out some of the activities of the teacher in such circumstances. The discussion will be limited to a review of what the teacher does in working with pupils; her techniques of evaluation, of recording growth data, and of planning with other teachers, will not enter into consideration.

The writers feel that a large number of teachers accept many of the principles governing growth but do not know how to apply these principles in the classroom. This chapter has been developed to provide through specific illustrations the help needed for directing instruction toward the goals of growth and learning.

I. A CONTRAST: GROWTH VERSUS LEARNING

LEARNING — TO GROW. The “learning” approach was and is, as a result of war-time confusion among many schools, a subject-matter approach. No matter what statements are issued from the superintendent’s office or printed in the school handbook, the objective for which boys and girls strive is to pass, not only to pass from one grade to another but to accomplish a whole series of passings such as passing in reading, passing in arithmetic, passing in spelling, and passing in a host of other subjects. Children are not to blame for having this goal since the schools themselves have

emphasized that passing represents success and not passing indicates failure.

The fact that a child can pass in arithmetic and fail in science, or pass in geography and fail in history, seems to indicate that the subject matter taught in the elementary school has few if any complementary relationships. Reading, for instance, in most schools is not particularly related either to English or to the social studies. Certainly the social studies and the natural sciences are frequently complete strangers to each other.

Perhaps the picture is not so bad as painted. The conscientious teacher — and this would be true of the conscientious teacher in any day or age or grade or with any philosophy — uses every possible method and device to bring about results most satisfying to both herself and her pupils. In the last analysis, however, it is the pupil who must assume responsibility for his acts. The teacher may feel sorry, to be sure, but it is the pupil who fails if he does not respond satisfactorily to the demands made upon him. The child learns the assignments, recites the facts back to the teacher, and passes the tests or is failed.

No matter how instruction is handled, the sympathetic and well-equipped teacher tries to postpone failure. If time and materials are available, the child having trouble is given assistance. Assistance, though, consists in helping him discharge responsibilities originally assigned by the teacher. Unlike the situation to be described later, the subject matter is selected, organized, and presented by the teacher. The child will not be given the chance to suggest or in any other way participate in the selection of subject matter. Selection of subject matter by pupils would be regarded from this point of view as silly, or as a softening of educational practices, or as nothing more than a waste of time. How can the child tell what is good for him? His participation would result in superficial and worthless (but perhaps enjoyable) activity. And if he is to have no voice in selection of subject matter, certainly he will have no opportunity to assist in planning its organization and presentation.

To summarize a situation well known to many of us, emphasis is placed upon the acquisition of facts, information,

and preparatory skills achieved through memorization. Each subject is taught in a definitely planned class period and not necessarily in a way related to the interests, the aptitudes, the abilities, or the maturities of the children. Such an attitude toward teaching fixes a limited responsibility upon each teacher and lends itself to rather easy evaluation schemes. Step by step analyses of subjects can be developed and required, and grade hurdles, marks, honors, and failures can be precisely determined. In justification it must be said that the proponents of this system advocate certain values such as preparatory, or vocational, or disciplinary, in the acquisition of facts, information, knowledge, and academic skills. Nevertheless, the emphasis is upon learning through formal memorization.

GROWING — TO LEARN. In one of the upper grades of an Alabama school, pupils were discussing laws recently passed or pending in the Alabama Legislature.¹ Since some of the bills dealt with appropriations for relief and for education, interest was readily aroused. These children had on every side of them evidences of the need for relief. Some became interested in one phase of the legislative program and some in others. Some were concerned about a proposed sales tax bill, and others about a measure which would govern the licensing of automobile drivers. The question, "Are there any bills before our national Legislature that will affect us as citizens in this community as directly as the local bills?" provoked lively discussion.

Attention finally settled on the Omnibus Flood Control Bill. That there was a national need great enough to justify the expenditure of the stipulated three hundred and twenty millions of dollars was argued and accepted by all. None could forget the disaster wrought by recent floods. Newspaper and magazine articles and informal talks with teachers who had been in the flooded areas made the pupils appreciate more fully the extent of the loss of life and property and the degree of suffering brought on by such a catastrophe. Further discussion revealed the fact that Alabama had suffered floods from the Cahaba, Alabama, and Warrior rivers and that

¹ KELLER, J. A. *Procedures in Large Unit Teaching* (Curriculum Bulletin No. 4). Montgomery, Ala.: State Department of Education, 1937, pp. 64-67.

even the immediate vicinity had not escaped devastating effects.

Questions like the following were asked: "Have we always had floods?" "Has any part of our country escaped them?" In answering these questions parents, neighbors, friends, and books were consulted. Soon graphs and maps made their appearance.

The next question raised was, "In view of the frequency and prevalence of floods, what has been done about them?" Two of the boys volunteered to interview a man whose small farm was flooded annually. Others found out about the great dams being constructed throughout the country, and about kinds, sizes, uses, and costs of levees, retaining walls, and spillways.

The matter of expense caused one alert youngster to raise the query, "If it costs that much to control floods, wouldn't it be better to find out what causes floods and to control the causes?" At this point the children and the teacher discovered that they needed additional help. The science teacher in the junior high school was brought in, and the following questions were discussed with him: "What are floods?" "What causes them?" "Do they have any advantages?" "What are their principal disadvantages?" "What methods of control are there?"

A number of worthwhile activities grew out of this project. The children experimented with soil and water and were taken on trips to see stratification and to find the types of soil in their region. The science teacher outlined the activities of the Tennessee Valley Authority, particularly those at Norris. His accounts and demonstrations pointed out the damage done by erosion and the great need for controlling it. This led up to the local problem.

The children, already aware of the seasonal effects of flood-water devastation, now realized for the first time the permanent damage done by erosion in their own locality. This time their field trip was highly motivated by the desire to discover the extent of erosion in their own school yard and its neighborhood. The children returned to their classrooms acutely aware of the need for immediate control. As the psychologists say, they were set for action.

Next the children decided that the project had to have a name. After some discussion the label MECP emerged, and the Montevallo Erosion Control Project was established. Volunteers built sign posts bearing neatly painted letters, and placed them on sites undertaken for experimentation and control.

The next stage was one of wide reading from encyclopedias, yearbooks, magazines, newspaper articles, and free, or inexpensive, literature from the Departments of Agriculture and of the Interior. These efforts brought much pertinent information. The science teacher was plied with questions concerning control details carried on by the TVA.

To synthesize exploratory study and cooperative planning, five committees were formed which included all members of the group. Each individual selected the committee to which he could contribute most and to which he felt he would enjoy being a contributor. One group set up a weather bureau, because weather has such a high degree of relationship with floods. In building this bureau the children spent every possible moment in the science laboratory. So enthusiastic did they become that they made and collected equipment not for one weather station but for four! Each had two thermometers, a barometer, a wind gauge, and a rain gauge. A mercury barometer and a wet and dry bulb thermometer, made by the children, were read twice daily, and the results were recorded on a chart made for the purpose.

A second group made erosion traps to measure the amount of erosion taking place in different areas. Three were placed in each of the following locations: a denuded hillside, a grass-covered hill, a cultivated field, and a wooded area. The amount of soil in each trap was measured daily and an average taken for the three traps in the group. By this method the influences of types of land surface coverage and of the degrees of land slope upon erosion were determined.

A third group, which was interested in reforestation, spent most of its time in the fields studying local types of vegetation, grasses, shrubs, and trees. Some planting was done, and recommendations for future plantings were made. From these studies, conclusions were drawn as to the effect

and usefulness of different root systems apart from their relationship to soil anchorage and their rate of growth.

Muscle and brawn, as well as study, played a big part in the activities of the dam builders. They selected two large gullies and a roadside ditch for the scenes of their labors. Permit forms granting the privilege of building on public property were developed and were approved by local licensing authorities. In the gullies three types of dams — log, plank, and brush — were constructed. For one particular ditch, which because of its location needed greater beauty and stability, a concrete dam was designed. Careful study of plans, discussions of the best proportions for a concrete mixture, estimating the amount of material needed, perusal of price lists, computation of costs, and arranging for the delivery of the materials all went into the planning done by this group.

Excitement ran rampant on the day when the forms were placed and the concrete was poured. The student weather bureau was discouraging, predicting unfavorable weather. The children decided to go on with their plans in any event, since they were behind in their time schedule. An hour after they finished, the rain fell in torrents. The builders, alert to every precaution, were soon back on the job and covered the fresh concrete. A heavy rain fell during the entire weekend. Individuals and groups made trips to see the dams, and came back elated because they were holding.

In reviewing what they had learned, the children were amazed at their earlier ignorance and their blindness to a problem of such great local and national importance. Were others in the community just as blind? How could people be warned? How could information be shared?

The way opened unexpectedly, and its nature furnished a suitable culminating activity — the local newspaper. The owner, when consulted, offered his cooperation. After thinking in terms of headlines, news, and editorials, then writing, editing, and writing again, the pupils sent the copy to press. Naturally it attracted widespread interest and approval.

The story of this project could go on and on. Our purpose has already been served, however, by its illustration of the

possibilities of relating educational activity to individual interests and maturities and of utilizing all available resources in carrying them out.

II. AN ANALYSIS OF THE CONTRAST

In order to clarify further the contrast between the two approaches to our general problem, let us go beyond the illustrations and analyze broad differences. In both situations teachers are attempting to bring about learning; but whereas one strives for acquisition and only incidentally for the development of the child, the other is striving more directly for development, with acquisition as a by-product.

LEARNING AS ACQUISITION. Education has for a long time been considered a learning activity. As a matter of fact the farther back we go in history, the more wholeheartedly do we find this definition accepted. Indeed, in primitive days, it will be found, learning and education were synonymous.

Over the long-time period of its development and from the learning or acquisitional point of view, education is specifically that activity which transmits the social inheritance. This definition implies not only handing down from one generation to another the prejudices and biases, blood feuds, and quarrels of primitive and not so primitive days but also, on a more cultural plane, giving the new generation easy access to the accumulated knowledge of its fathers and grandfathers. To do so it has been necessary to provide instruction. When parents became too busy with other duties, teachers were obtained to impart the knowledge, skills, habits, customs, and ideals which the older generation regarded as essential. Through education, then, the social heritage is "acquired" by the coming generation.

As the acquisition view of education developed, cultural learnings emerged and became dominant over skills of self-protection, knowledge of fighting, and preservation of the family, clan, tribe, or nation. Since that time evaluative activities have been directed away from personal physical performance and toward performance in a mental or intellectual pattern. Learning has demanded evidences of memorizing, knowing, possessing, and the like. In other words, the criterion of an educated man became that of possessing



In the modern school, children learn to assume greater responsibility; this scene shows a second grade toyshop at Christmas time. (Courtesy of the East Grand Rapids, Michigan, Public Schools)

information which an uneducated person did not possess. This view has been widespread for about a thousand years. In spite of our familiarity with it, let us provide a typical illustration. The following conversation was taken verbatim from a class in a city school:

Teacher: "Most of you did very well on this test. We will go over the questions so that if you have any questions maybe I can clear up some of the difficulties. *All right!* The first one, 'Why . . . ?'"

Pupil: Pupil gives answer.

Teacher: "Yes! Is the . . . ?"

Pupil: "No."

Teacher: "No, it isn't!"

Pupil: Asks question.

Teacher: "I said very definitely, 'Do not use . . . ' I don't know whether any of you said . . . but that's wrong. All right! The next question."

Pupil: Gives comment.

Teacher: "Yes, then I *wanted* you to tell how . . ."

.

Teacher: "All right, any other questions on the test? About your notebooks, some of you have not handed them in yet. You know *I take off five for those that are late. All right! Get them in just as soon as possible.* I am giving a make-up test on Wednesday afternoon after school in this room. If you people who missed it cannot take it, then let me know and I think the test will be Wednesday morning . . ."

It is not difficult to discover in this example certain elements common to all classes in which learning as evidenced by meeting test conditions is the outcome of educational effort. Perhaps an enumeration of those elements will be helpful.

First: Learning is to be classified as acquisition when

(a) there is subject matter set out in advance of teaching as material to be learned;

Example: Factual reproduction.

(b) the teacher's efforts are directed toward bringing the children to a predetermined goal;

Example: "Most of you did very well on this test. We will go over the questions so that if you have any questions maybe I can clear up some of the difficulties."

(c) the emphasis is upon an outcome of possession, achievement, conformity.

Example: "Yes, then I wanted you to tell how . . ."

Second: Learning is to be classified as acquisition when the activities of the teacher consist of

(a) setting tasks;

Example: "All right! Get them in just as soon as possible."

(b) giving reasons for the task set;

Example: None in the excerpt quoted. Might be found in the reason previously given to the children for studying this particular lesson.

(c) offering rewards for effort, and setting and administering penalties for lack of effort.

Example: "You know I take off five for those that are late."

Third: Other activities of the "acquisitional" teacher which are not directly forthcoming from the illustration are

- (a) expressing sympathy or interest,
- (b) controlling order by issuing rules and disciplining offenders,
- (c) directing activity by commands or questions,
- (d) explaining points not understood,¹
- (e) setting models to be copied or followed,
- (f) doing things for pupils they cannot do for themselves,
- (g) hearing recitations based on repetitions of memorized materials,
- (h) drilling, reviewing, inspecting, and perfecting for no other obvious purpose than for perfection,²
- (i) making and recording judgments of performance in relation to predetermined standards.

Rightly or wrongly, the situation is one in which there is complete or almost complete domination by the teacher. The responsibility for what is to be learned, what is to be done in order to learn, how and when it is to be done, and whether or not it is done satisfactorily, rests with the teacher and the teacher alone. The relation between teacher and pupil may be one of two possibilities: that of master and slave, or that of a benevolent despotism. In either one the "good" pupil complacently, intelligently, and industriously obeys orders. Teaching and its results are determined by subject-matter tests of knowledge and skill.

LEARNING AS GROWTH. In recent years there has been a rapid expansion of the view which regards education as having a function quite different from that described above. This view originated centuries ago but attracted general attention only about the time of the general revolutionary movement

¹ These activities may be found in the "growth" as well as in the "acquisition" type.

² In the "growth" concept teachers may help children perform activities, but only to guide toward the pupil's level of perfection, not the teacher's.

in Europe. Since then it has been given circulation until now nearly all teachers know about it. It is still, however, a minority view as far as its influence on educational practice is concerned.

This view looks upon the child as a growing organism with great inherent possibilities. Likewise it looks upon society not as something to be preserved and to be preserved unchanged, thus perpetuating itself on a static plane, but as an entity having powers of growth. It regards the improvement both of the child and of society as the goal of education.

This emphasis on growth is nothing radical. Growth is considered by all scientists as governed by natural laws or, we might say, by natural consequences. From this angle teaching takes on a new role: it attempts not to force the child to grow but to provide the conditions favorable for growth. Like the farmer who plants, cultivates, and weeds, and only indirectly causes vegetation to grow, the teacher also only indirectly causes his pupils to learn.

Knowledge, however, is not regarded as unimportant. It becomes a means to an end, rather than the end. Nor is it necessarily reduced to a low level by being given different emphasis. It is looked upon not as something passively absorbed but as something acquired from experiences which have value and meaning for the pupil. The worth of the teacher's efforts should not be determined by what the child *knows* but rather by what he *is*.

Perhaps this view can be enlarged and clarified by other examples than the one described at the beginning of the chapter.

Example 1: In the Francis Parker School of Chicago, the art program at the time of our visit was concerned with bringing out possible hidden abilities as well as with the development of ability already discovered. After walking into the classroom, or perhaps we should say the studio, for it was far too busy and informal to be thought of as a classroom, one couldn't help being impressed with the meaningful activity shown by all present.

Certain individual students moved from one group to another, observing, talking, and then withdrawing to a corner or bench for work on some project of their own. The teacher,

seemingly pleased by our visit but obviously very busy, explained that no attempt was being made to develop conformity on the part of students. Some questioning revealed the fact that there was also no attempt to schedule the use of the different media such as paint, clay, or crayon within different time divisions. Media were selected according to need. Individuality was certainly recognized and respected.

As we wandered around the room, we discovered one group of five or six busily painting. Another, which was sitting at a table talking and making notes, certainly did not appear to be working on anything related to art; but inquiry brought out the information that they were planning the decorations for a school party. In another part of the room two students were using clay to make statuettes, and several girls were developing fashion displays.

In this school, students are not competing with one another to see who can do the best. Each is working according to his own plan and at his own level of ability. Of course, the program is carefully developed and the industriousness, enthusiasm, and creative efforts of these children did not come about by chance. Conferences, try-out experiments, and a careful record of the past experiences of the child brought this result. And yet the main implication in this illustration is the way a school can minister to individuality.

Let us use another illustration to point out how the school attempts to transmute into learning activities the goals for social development.¹

Example II: In the city of San Jose, a fourth-grade group was studying its community. The study began in the reading class with the following conversation:

Teacher: "I wonder how many of you remember the story of the little pig who asked his mother what his eyes were for? [Children remembered.] Do you also remember what Ted's father said to him in the book of *Gold and Silver*? He told him while they were traveling and looking at various points of interest that later he would talk with him about the things he saw. Ted had looked puzzled. His

¹ A unit developed by Mabel S. Willson with fourth-grade children. From HORRALL, ALBION H., and others. *Let's Go to School*. New York: McGraw-Hill Book Company, 1938, pp. 238-327.

father then told him that many people look but never really see. They really do not think or ask questions about what they have seen. I would like to see today if you have learned what Ted did. Let us take a book, pencil, and paper, and take a walk for several blocks. Do not say a word, but write down some of the things you look at."

The children took a rather extensive walk through part of a residential district, the Civic Center, a commercial district, and several semi-industrial sections. When they returned to their room, the following discussion took place:

Teacher: "Shall we write a list on the board of the things you looked at?"

Responses: "The Auditorium." "The Music School."
"The City Hall." "St. Claire Hotel."

From this beginning a long list was made. Through questioning, the idea was brought out that what the pupils saw was a "community." Various aspects of a city, such as communications, transportation, water supply, and fire protection, were considered in a definite relationship.

The children were interested in their findings. They asked questions and shared a desire to learn more about their community. Since reading material was not available at their maturity level, they decided to visit those key points that make up a city and thus get their information directly.

During the discussion it was brought out that their own school room was a community. Thereupon they decided to change the room so that it would be more like the city. During the next few days, they elected officers corresponding to those who held municipal offices, and then planned further developments somewhat on the model of the city.

As they were reading some material which had been suggested as a source of ideas, they decided they would like to see their city from the air. An excursion was therefore planned to one of the high buildings from which they could see over the city.

Many other plans were made. Not of least importance was the activity devoted to determining safety rules to be applied as the group traveled around the city.

Another decision involving planning was also vital and interesting enough to recount. The children had been in the habit of keeping records of their activities through the use of diaries and log books. Now they decided that the old type of record was not adequate. A different kind was essential. So finally the idea evolved that the best procedure would be to write a story book about what they saw, and this, if good enough, would be used as reading material for other grades later desiring material on their city.

One of the first out-of-school activities following the group's preliminary trip was a visit to the City Planning Commission with the real City Manager as a guide. At the offices of the Commission the children listened attentively and a good many of them took notes of ideas and information. They learned not only about future plans for the city but also a good deal about the City Manager form of government. Going back to school, they discussed their activities and the new information they had acquired.

The children were then ready for action. Making a large map on a portion of the floor they had cleared, they charted further visits. As these plans were carried out, the map became more and more real. To give further atmosphere of reality, street signs were set up, sand was used to simulate pavement, and miniature replicas of various city buildings were constructed. In addition a large frieze depicting the progress of their activity was painted.

With the execution of each plan the group went into "council" sessions to discuss what they saw and to evaluate and determine new plans. In addition, dramatizations were developed: one group dramatized the retail store they had visited; another, their trip to the creamery; others, the hotel, the wholesale stores, and the warehouses. To determine the values of these experiences, all these dramatizations were made to lead to evaluation activities of what had been done.

The children in this learning experience had many culminating activities. They built models of important buildings, as we have mentioned before. In order to see how distribution of consumer goods took place, strings were attached to each source of individual need shown in the model, such as food, light, power, and heat, and run to what was considered

a typical home in the pictured community. In this way the children made generalizations concerning the relation of the community to the home. Further generalizations were made in the writing of their book.

The children soon discovered that they had learned and were learning many things about their city. Naturally they were very fluent in quoting information. They also learned how to cooperate among themselves and with outsiders. Many skills were learned in their work on models. Not of the least importance, their English program was completely related to the study in many ways. According to the final report, new interest was awakened in the activities of the community, the relationship of the community to the home, and the need for cooperation with those associated in making a community function. In the school life itself, music and creative art, writing, English, speech, spelling, and arithmetic were tied in with the experience and many skills were learned as needs were discovered for assistance in these fields.

GENERAL ELEMENTS IN THE GROWTH METHOD. There are certain generalities or common elements in both these illustrations and in many others that are available, which may be summarized as characteristic of the growth concept of learning.

First: In neither illustration is the learning of academic facts the outcome toward which the children devoted their efforts. Learning was certainly accomplished, however. The children of the Francis Parker School accomplished fine art work, and the children in the San Jose school learned much about social and economic needs within a community.

How can this kind of learning be described? Formally, it can be stated that in the growth concept of education, the accumulation of knowledge is incidental to experience. This means that learning itself is a by-product of experience, something growing "out of" rather than something "added to."

Second: In the first illustration, in the art activity, the teacher was attempting to make possible all kinds of art experiences. In the second there was more of an attempt to influence social behavior, to have something

happen as the result of experience. We may say, then, that learning is to be classified as growth when the teacher's efforts are directed toward helping children either to have experiences or to profit by their experiences.

Third: In the second illustration, the reader may have wondered whether all the activity described took place during class hours or after school. Many schools have social service and related community projects which are participated in by children but in which all planning and execution of activities are after-school or club-period projects. Learning, from the growth point of view, would approve of either technique, but the plan more directly related to classroom procedure, as described in the illustration, was executed during school hours. Where this is done, much of the regular subject-matter schedule disappears but not the subject matter itself. It naturally does not follow a preconceived arrangement, but it is still present. In the program in which experiencing or profiting from experiencing is paramount, subject matter is determined by the needs of the child as brought out in the experiencing.

Fourth: The question may be raised as to what the teacher does to initiate a program so closely related to the growing interests of children. Since first things should come first, we might narrow the question by stating it as "How begin?" The old way of the teacher was to make an assignment, that is, to tell the pupils what to do. The new way is to allow children to participate, or at least to share, in the planning. But this is easier said than done and needs further explanation. A fine illustration of the point can be found in the description of the Alabama flood control project. Professionally we may say that the teacher emphasizing growth stimulates purposes by presentation of objects, situations, or opportunities which arouse not only interest but the desire to do something because of benefits which the individual considers are likely to result.

Fifth: Arousing interest and desire for learning, even at that level that develops social awareness, is not enough for the growth teacher. Studying flood control may develop an alertness to a problem but contributes very little in itself to the individual. The teacher in the Alabama proj-

ect saw the opportunity to go further, to translate knowledge into action resulting in both individual and social values. In other words, this teacher saw an opportunity to guide objectives into levels of action.

Stated technically, the activity of the teacher from the growth point of view includes guiding purposes to higher levels, levels which will result in action and changed behavior.

Sixth: Some children become bored, lose sight of their objectives, or develop fears and complexes concerning the quality of their efforts. When this happens, it is up to the teacher to provide necessary re-stimulation and guidance, to overcome fears and inhibitions by a study of the individual, to express sympathy and interest, to point out successes, and to explain causes of difficulty so that a renewal of interest and effort is naturally forthcoming.

Seventh: The purpose of educational effort is not alone that of learning, nor alone that of having worthwhile individualized experiences. One of the most significant and valuable outcomes can be derived through working with others. Common social values can be gained through cooperative effort.

But children are not necessarily cooperative. Conflicts, disputes, domination-submission problems, all develop in either individual or cooperative activity. It is the job of the teacher to take an active part in solving such problems. This is done by pointing out problems of conflict and by encouraging children to gather evidence and become objective in their views.

Eighth: Further activities of the growth teacher are calling attention to unnoticed problems, answering questions, and supplying materials, methods, media, references, and self-help guides. Such guidance is for stimulative purposes, however, and not for silk-gloved or sugar-coated teacher direction.

Ninth: Our last point deals with a thought which is neglected by many of those attempting to teach from the growth point of view. Everyone believes in the use of experience in learning. But some teachers tend to over-emphasize the importance of experience by thinking that

experience is the sum total, the culmination, of a learning activity. This is not true. Learning must go beyond experiencing.

A child may play an exercise on the violin over and over. He is having an experience; but if he is playing incorrect notes, his learning experience perhaps is negative, certainly is limited.

Experience, to be helpful, must be followed by a period of generalization. This gives the teacher a responsibility over and beyond that of guiding an experience into a complex teaching problem. A learning activity thus is not complete in itself. It becomes further the job of the teacher to help children interpret experiences. The teacher can do this by calling attention to possibilities in generalizing and by trying to help children arrive at conclusions. Thus, only through generalization can an experience have significant meanings.

III. IN CONCLUSION

In the growth concept of learning there is a continuous shifting of responsibility from the teacher to the pupils for the direction of activity. The teacher dominates in the final analysis according to the degree of maturity attained by the group but mainly in defining the field of activity. Within the limited field of activity, all the teacher's stimulation, guidance, and assistance are submitted to the pupils for their consideration and decision. As the pupils become more mature and show evidence of self-control, domination decreases and more and more direction and control are taken over by the pupils.

SELECTED REFERENCES

1. HORRALL, ALBION H., CODONE, LYDIA E., WILLSON, MABEL S., and RHODES, LEAH SMITH. *Let's Go to School*. New York: McGraw-Hill Book Company, 1938.
2. KELLER, J. A. *Procedures in Large Unit Teaching* (Curriculum Bulletin No. 4). Montgomery, Ala.: State Department of Education, 1937.

5

Instructional Organization

IN THE previous chapter illustrations and analysis have brought out the differences between "growth" teaching and "acquisitional" teaching. The present chapter studies the growth approach from the standpoint of the psychology of learning and will answer several questions which might be raised. For example, one might ask, "When is a learning activity, such as the Alabama project, complete?" Or, "How can a teacher organize learning around the large blocks of time suggested in Chapter 3?" These queries imply certain standards of accomplishment. In this chapter, then, our primary purpose will be to point out how best to organize instruction in accordance with such criteria.

I. THE PROJECT METHOD

The first generally popularized American term applied to this development, which is still growing and evolving, was the name "project." A distinction was drawn between the idea of the project and that of the Herbartian "type study." According to Cubberley:¹

The work of John Dewey, in the experimental elementary school he conducted for some years (1896-1900) at Chicago, was pioneer work along this line. Making motor expression, social participation, and the industries of life the ideas around which instruction centered, and making the school reproduce the typical conditions of social life, he constructed a course of study based largely on occupations, projects, and social demands, and continually calling for expression, rather than

¹ CUBBERLEY, E. P. *Public Education in the United States*. Boston: Houghton Mifflin Company, 1919, p. 445.

receptivity. In his school, the work of the teacher was largely that of planning, guiding, and interposing "pedagogical interference" to direct the activities of the children along lines that would be helpful and educationally profitable. The old formal school subjects, with set times for classes, were replaced by studies, projects, and activities, into which were introduced number, speech, reading, writing, drawing, manual work, history, and geography, as needed to understand or work out the project of the day or week. The school resembled a combination of a kindergarten and a series of workshops more than an ordinary school.

Many other schools attempted reorganization along the lines introduced by Dewey. These schools were more interested in the application than in an exploration of the idea. It has remained for Kilpatrick¹ really to analyze what the project method was attempting to accomplish. When the word "project" came to his attention, he looked at it skeptically:

Such a concept . . . must, so I thought, emphasize the factor of action, preferably wholehearted, vigorous activity. It must at the same time provide a place for the adequate utilization of the laws of learning, and no less for the essential elements of the ethical quality of conduct. The last named looks of course to the social situation as well as to the individual attitude. Along with these should go, as it seemed, the important generalization that education is life — so easy to say and so hard to delimit. Could now all of these be contemplated under one workable notion? If yes, a great gain. In proportion as such a unifying concept could be found, in like proportion would the work of presenting educational theory be facilitated; in the same proportion should be the rapid spread of a better practice.

While others saw in the concept purely a mechanization, Kilpatrick saw in it a means for facilitating desirable growth on the part of the child. To him the project method became part and parcel of a philosophy emphasizing "purposeful activity."²

¹ *Teachers College Record*. XIX: 3-4. Sept., 1918.

² *Ibid.*, p. 4.

It is to this purposeful act with the emphasis on the word purpose, that I myself apply the term "project."

. . . Suppose a girl has made a dress. If she did in hearty fashion purpose to make the dress, if she planned it, if she made it herself, then I should say the instance is that of a typical project. We have in it a wholehearted, purposeful act carried on amid social surroundings. That the dressmaking was purposeful is clear, and the purpose once formed dominated each succeeding step in the process and gave unity to the whole. That the girl was wholehearted in the work was assured in the illustration. That the activity proceeded in a social environment is clear; other girls are at least to see the dress. As another instance, suppose a boy undertakes to get out a school newspaper. If he is in earnest about it, we again have an effective purpose as the essence of a project. So we may instance a pupil writing a letter (if the hearty purpose is present), a child listening absorbedly to a story, Newton explaining the motion of the moon on the principles of terrestrial dynamics, Demosthenes trying to arouse the Greeks against Philip, DaVinci painting the Last Supper, my writing this article, a boy solving with felt purpose an "original" in geometry. All of the foregoing have been acts of individual purposing, but there are just as truly group projects: a class presents a play, a group of boys organize a baseball nine, three pupils prepare to read a story to their comrades. It is clear, then, that projects may present every variety that purposes present in life. . . .

II. THE UNIT—A COMPLETE EXPERIENCE

PHASES OF A UNIT EXPERIENCE. The above quotation from Kilpatrick's analysis was deliberately selected in order to show the close relationship between the earlier concept of the "project" and the present concept of the "unit." Whereas many of Kilpatrick's followers hailed the project method as a means of synchronizing and streamlining the curriculum and stressed only its mechanical advantages, Kilpatrick himself saw in it a better total learning situation than existed without it. Thus the early attention given the project has moved into two contemporary areas, one a mechanization or administrative area, and the other an instructional or psychological area. It is in this latter area that present-day thinking on "unit" teaching is operating

and where the influence of Dewey and Kilpatrick is greatly felt.

All natural learning situations have certain general characteristics, regardless of the fact that they may differ in size, complexity, and degree of relatedness. For example, a group of elementary school children wanting to plant a garden will find within the general problem several smaller ones, such as selecting a site, testing the soil, testing the seed, delegating responsibility, planning the cultivation, harvesting the crop, and so on. Division lines may be drawn arbitrarily and yet each division, regardless of complexity and size, represents an experience complete in itself. It is in this series of experiences that there may be found the general characteristics, which we will now call "phases of a unit experience." The phases are six in number: (1) stimulation, (2) purposing, (3) planning, (4) execution, (5) judging, and (6) generalization.¹ To illustrate each of these, let us return to the unit experience of the San Jose children.²

First Phase: Stimulation. Miss Willson developed or led the interest of the children, already aroused from a reading experience, into the new area of studying the community. In this phase the teacher assumes initiative, and it is therefore a phase which may precede that of purposing.

Teacher: "Do you also remember what Ted's father said to him in the book of *Gold and Silver*? He told him while they were traveling and looking at the various points of interest that later he would talk with Ted about the things he saw.

"Let us take a book, pencil, and paper, and take a walk for several blocks. Do not say a word, but write some of the things you look at."

From the trip suggested, the children became interested in certain of their observations and decided to follow them in greater detail.

¹The names of the six phases of a unit experience were developed by Prof. S. A. Courtis in his *Philosophy of Education*. Ann Arbor, Mich.: Brumfield and Brumfield. (Mimeographed.)

²For other examples of excellent units see *National College of Education, Curriculum Records of the Children's School*. Evanston, Ill.: National College of Education, 1940.

Second Phase: Purposing. This is the phase on which Kilpatrick places so great an emphasis. At this point, if the unit is to succeed, the children develop purposes of their own. All the skill of the teacher is needed here; for the value of the unit or the value of the experiences which may evolve is almost in direct proportion to the worthiness of the purposes projected.

In the unit developed by Miss Willson, purposing was beautifully done. The discussion following the children's trip led them to see that in their classroom also they had certain characteristics of a community. Plans galore developed, other excursions were proposed, records to be utilized were discussed, and other possibilities were pictured.

Third Phase: Planning. Who shall say where purposing ends and planning begins? Certainly we could draw no sharp line between the two in the activities of the San Jose children we are observing. Nevertheless, the distinction enters into the unit in the stimulation phase, in the purposing phase, and at times even in the next phase.

Fourth Phase: Execution. The word "execution" has clear connotations. It means carrying out plans, doing the unit, etc. But as indicated before, it may involve a study of problems which arise as the unit progresses and a need is found to re-plan. For example, the children in our story started "executing" their plans. One of their first acts was to visit the office of the City Planning Commission with the City Manager, but after this visit they discovered a need for re-planning. At the City Planning Commission, they listened attentively and took notes about the City Manager form of government. Going back to school, they discussed their activities and the new information they had acquired. Other activities went on as discussed previously.

Fifth Phase: Judging. The "council" sessions represented a look-back or a judging of their work.

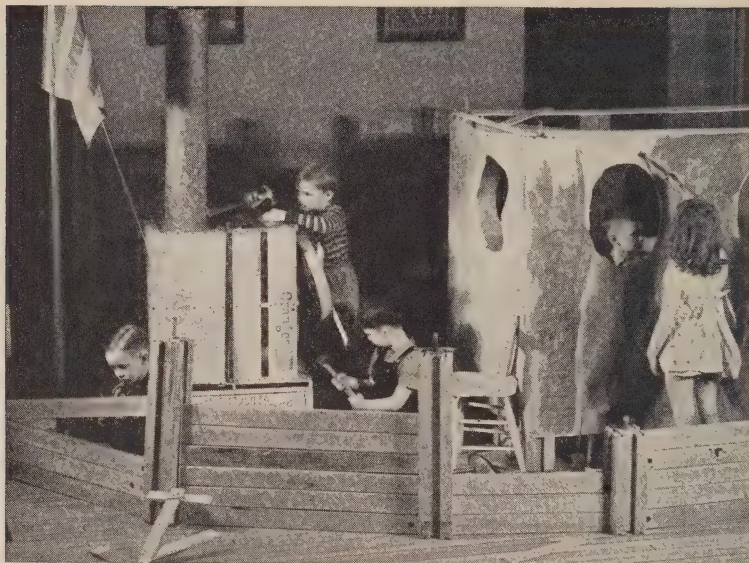
Sixth Phase: Generalization. The last phase is important, the so-called making of generalizations. What was learned? How does it affect the children's lives, their behavior? It is this phase that is so often neglected in a learning experience and so frequently it deals, at least in the evaluation made by teachers, with subject matter rather than with personal

development. It is a phase of the unit experience which must be participated in by the children unless the total experience is to mean to them nothing more than a pleasant way of learning prescribed subject matter.

Let us look further into these six phases. What are the psychological implications? What is the justification for such a breakdown of a meaningful experience?

AN ANALYSIS OF UNIT TEACHING. *Stimulation*. By stimulation is meant the arousal of a desire or the direction of an interest. Desire is an inner effect brought into being by some element in the external situation — in this instance, the schoolroom environment. Stimulation is not something that happens automatically as, when the temperature is raised, a person becomes warm and, with a higher temperature, becomes still warmer. Adequate stimulation comes about when two things are satisfactory: a proper stimulus, the presentation of the teacher, as it is likely to be; and the condition of the organism, that is, the child. Thus desire can be aroused only by a stimulus acting on the organism itself. But a stimulus will react differently on different individuals, and differently on the same individual under varying conditions. On the part of young children particularly, a positive desire will often express itself in an impulsive manner, while negative desire or unaroused desire shows itself through indifference or conflict. In the case of the latter, something else may be necessary than further motivation. The implied mistake is as frequently made as any other error in teaching technique. Since stimulation has for its goal the formation of desirable or worthy purposes, skillful stimulating activities are not represented by pressures to make the child purpose. Purposing on the part of the child will occur when the proper stimuli are presented without pressure. Skill, however, in this phase of the unit development is found not only in the selection of stimuli but in knowing the inner "state" or inner "organization" or "set" of the pupil. Knowing these, selection of stimuli becomes a secondary problem.

A common error is made by the teacher who thinks of unit teaching as a means to get children to acquire information, to lead or drive the pupil to accept or establish a goal. Trap-



Working in large units develops a variety of skills and learnings.
(Courtesy of the Ferndale, Michigan, Public Schools)

ping children into doing something they do not want to do is not an earmark of satisfactory stimulation. A teacher who does this charts her course by picking out subject matter she wants the pupils to learn, and then selects devices to make it acceptable and, if possible, agreeable and pleasant.

True stimulation follows an opposite course. The teacher either leads her pupils so naturally that they see and select purposes that are worthy in relation to broad goals or she has the ability to present situations of such worth that the pupil desires to accept them for his own. In such an interplay of pupil and teacher relationships, the most important characteristic of the good teacher is the latter's respect for the pupil's personality. Situations, proposals, counterproposals, developed perhaps with subtlety but still with fairness and understanding, result in mutual respect and appreciation. Such a teacher risks and listens to criticisms, and is ready to make amendment and provide alternative devices. These relationships also enable the teacher to help certain pupils



Teaching through large units such as that shown here is a modern trend.
(Courtesy of the Ferndale, Michigan, Public Schools)

adjust personal or bipartisan or asocial idiosyncrasies which they may have developed and which hinder them in seeing desirable goals.

Purposing. Although we have already emphasized the importance of purposing, the word itself is hard to define. What happens to the organism of the individual when he purposes? Desire again plays a part, and desire may well be defined. Let us call it a mental image, a mental image in which the individual sees himself in a happier, more pleasant state. This mental image calls up an urge for accomplishment. The "mental state" is, thus, something to be achieved in a manner which leads to a more satisfying condition.

Since purposing, or its formulation, leads to planning and accomplishment, three aspects which it seems to possess must be considered. These are important since all are necessary to lead to action. In the first place there must be a conscious recognition of desire. The child himself in the exploratory phase of stimulation needs to make counterchoices and

to visualize clearly the changes he wishes to bring about. Secondly, an association must be discovered between plans of action and goals that may be achieved with satisfaction. Plans of action may take the form of drudgery, unpleasant activity, drill procedure, and many things not usually associated with the "experience techniques." Working toward a goal one wants to achieve often results in courses of action which are very tedious, trying, and difficult to sustain. Those who have purposed carefully and in relation to their interests and organismic needs frequently wade through work activities much more tedious and boring and trying than might have been called for under a more circumscribed or academic course of action. The third step is contingent upon the second: the decision once made must be sustained until goals are achieved. Re-planning may be necessary and plans modified, but nevertheless this last step must be followed as long as the goal is acceptable.

Planning. Planning is closely related to purposing. From purposing there will come a comparison of the present with the desired future. This is another way of calling it a comparison of present conditions with anticipated conditions. Comparison is necessary, for it provides the child with means for determining the changes which must be made in order to satisfy desire.

From this point of view a unit experience is one which builds upon those experiences the child has already had. Thus it is that the past always suggests the future, that one activity leads to another, and that experiences are related into a unity and continuity if they are to have meaning.

Planning, like purposing, involves, then, a review of past experiences by which previous adjustments have been made. It also represents a selective process, a picking out of the elements applicable to the current problem, and, finally, putting together the selected elements into a pattern as the proposed plan of action.

Execution. Execution refers to experimentation, correction, and revision, and the consequent following out of plans. The success of this period depends greatly upon the skill of the teacher in the purposing and planning phases of the unit. It can probably be said that when the teacher's job has been

well done the children are so anxious to achieve their purposes that they will resist all frustrating forces or effects which may crop out. In the ideal situation, control begins to pass from the hands of the teacher in the direction of pupil-control. As stated by Courtis:¹

The teacher's work during this phase of teaching is to *watch* (not instruct), to *reward success* by entering into pupils' enjoyment of it, to give the pupil recognition through her approval, to *encourage effort*, to render assistance when it is asked for and when in her judgment further failure would result in too great discouragement. At this stage skill in teaching consists in knowing *when* to give direct help and *when* to spur a pupil to greater effort. It is the pupils who are in charge, and successful teaching is characterized by the growth of the pupils in self-direction, self-appraisal, self-control. These abilities cannot be acquired except by practice. Progressive teachers, therefore, are careful to give their children opportunities to exercise these powers. Hence the surrender of control.

Under absolutely ideal conditions, *assistance* would be the sum total of a teacher's work. The pupils would discover their own problems, form their own purposes, do their own planning, acting, judging, and generalizing. With untrained pupils, teacher control, directed toward the ideal, may rapidly develop enough self-control to enable the pupils to "take over" a part of the process. As they grow in independence and self-direction, they take over more and more of the work until in the end a teacher is unnecessary. In other words, that teacher is most successful who most rapidly makes herself *unnecessary*; who most rapidly turns out individuals with powers organized around *worthy enduring purposes*, and adequate to achieve such purposes.

In the execution of a unit, culminating activities are important. "Culminating activities" refers to the final aspect of this phase of the unit, but does not represent the final work of the class in the total project. Let us make this point clear because so many teachers and principals feel that a unit is complete if it ends in an exhibit, a demonstration of art work, or the like.

¹ COURTIS, S. A. *Philosophy of Education*. Ann Arbor, Mich.: Brumfield and Brumfield, 1935.

Culminating activities in the execution phase represent progress in completion of plans and are desirable because they keep motivation throughout the period at a higher level than would be possible without them. Psychologically they extend the unit into social and emotional levels and afford the child security, recognition, acclaim, and understanding when developed naturally. From this standpoint they are sound.

From a practical standpoint they are those activities which provide an opportunity to summarize and to round out the experiences developed in the unit. Many schools often make the mistake, however, of selecting units which have appealing and popularizing culminating activities. This is not desirable. A unit should never be selected because of strong emotional or dramatic appeal but rather because of a more deeply rooted need or a natural lead; in fact many worthwhile units have no strong or interesting culminating activities. Since the purpose of unit organization is to provide environmental enrichment, not to stage a show, the teacher should develop culminating activities which are a natural outgrowth of the unit rather than something staged or dragged into it.

Judging. When plans have been followed and the work is about done, there arrives a stage at which teacher and pupil must evaluate. Although this is the point where appraisal is necessary, it must not be felt that appraisal is limited to any one point in the sequence; it is often necessary at various other places throughout the unit.

Continuing evaluation takes note of difficulties which are encountered, appraises means which have been developed to solve difficulties, and checks progress as it is made. Judging activities may take the form of group discussions, a recording of progress, and pertinent discussion.

End-point evaluation is of a somewhat different sort. When this phase is reached, the teacher usually feels the need for taking the initiative and directing the class activity. The justification for assuming initiative at this point is the teacher's greater appreciation of the value of the childrens' experiences. She realizes that experiencing is not the whole of the learning activity. The child must not only have experiences; he must benefit by them. Thus it is the teacher's

responsibility to assist children in seeing and appreciating the significance of the experience. To do so it is essential to bring about a sharing of experiences,¹ to help children formulate their learnings, and to develop relationships between these formulations and their new needs.

Generalization. Generalization is the final phase of evaluation, of which "judging" is the first. Whereas judging looks back to purposes and sees problems and difficulties, generalization brings a unity to all aspects of experience.

Many devices may be used in bringing out generalizations. A common one is that of discussing and judging whether goals have been accomplished. Another is deciding upon and listing facts, understandings, and ideas which are an outgrowth of the unit. Other suggestions may be found in the following questions:²

1. To what extent have the students' experiences been extended and enriched?

- (a) What contacts and experiences have they had which will lead to further learning?

- (b) What understandings and concepts have they gained?

- (c) What important facts have they learned?

- (d) What interests have they developed?

2. In what way have the students improved in research and in study techniques?

3. In what ways have the students improved in ability to plan, to think, to evaluate their work, and to work independently?

4. What evidences are there that the students have learned better to work together, and to consider the welfare of the group?

5. What evidences are there of desirable change in attitude among the students, and of carrying over the attitudes into other situations?

6. Have children deficient in social attitudes or emotional balance been helped to better adjustment?

7. To what extent have the children grown in needed skills and abilities?

¹ Each child has not necessarily had the same experiences as another child, nor have all experienced on the same levels.

² KELLER, J. A. *Procedures in Large Unit Teaching* (Curriculum Bulletin No. 4). Montgomery, Ala.: State Department of Education, 1937, pp. 55-57.

III. MISCONCEPTIONS OF UNIT TEACHING

In the main, "misconception" is the name given to the point of view of those who use a unit organization as a means to academic ends. This might be called "teaching by units" in contrast to what has already been called "unit teaching." Our point here is not necessarily to condemn such techniques but only to make clear that they are not what we are talking about when we discuss unit teaching. Let us elaborate!

Teaching by units is characterized first of all by the development of a carefully prepared unit before instruction begins. It may be prepared by the individual teacher, by subject matter specialists, by groups of teachers, from textbook suggestions, by the superintendent, or by other administrative officials. The process of selection may be the result of a staff instructional program going on over a period of a year or two under the direction of a curriculum expert hired for the purpose, or it may be a less presumptuous undertaking going on through local administrative guidance without outside help.

Scope and sequence are the main earmarks of such an authoritatively selected curriculum. Those who select the content have been over the materials and are more or less familiar with them. Difficulty has been rather clearly established, thus providing a logical development and division of content. It is this division which, more than anything else, justifies our objection to the use of the word "unit" in connection with it.

Subject-matter units are usually scheduled in relation to other units in a given semester or year. The time to be devoted to each one is decided in advance, and each must be begun and finished within the limits allotted because the subject-matter sequence must be carefully followed. Breaking the sequence would minimize the value of accomplishment within a given unit area.

It follows logically that subject matter in such a unit organization deals with the past rather than with an exploratory present and a cloudy future. The past is safe and organized. Or, stated in another way, the present and the

future are unacceptable because commonly approved generalizations have not yet been made.

A second characteristic of teaching by units is strong reliance upon books, texts, supplements, and other references, and only slight dependence upon the human and physical resources of the school and community. As dependence is placed upon books for study, so is dependence placed upon the teacher for the direction of the unit. Materials, methods, sequence, and evaluation are all under the exclusive direction of the teacher. Interaction between child and environment is reduced to a minimum and only incidentally becomes a part of the educational process. Self-direction as a goal is also incidental rather than a main objective. Creative teaching is limited. Staff organization and subject-matter budgeting make it mandatory for the teacher to stick to the outline and to shun liberal adjustment of materials to pupil needs and abilities.

A third characteristic, and the one most open to criticism, is the fact that goals are established before the unit begins; they are inherent elements in the subject matter rather than outgrowths of pupil-environment interaction. Consequently they are expressed as facts and are measurable by predetermined standards. Closing the subject-matter unit is almost a reverse of the method of the experience unit. Instead of looking forward, anticipating the next move, the subject-matter unit ends by looking back. Reviews and tests, resulting if possible in mastery, are the goal. Teachers find it expedient to have children exhibit their knowledge instead of developing understanding and relationships.

IV. THE CONTRIBUTION OF THE SOURCE UNIT

A bright spot on the horizon of instructional organization is the relatively new idea of the "source unit." It is a result of the long-time controversy between the traditionalists and the progressives over the issue of planned versus unplanned learning activities.

For years upon years, we might almost say generation upon generation, teachers were told that planning was a definite essential to teaching. Consequently the pre-service teacher learned to write out lesson plans, and the teacher in

service wrote out lesson plans — plans for the day, plans for the week, and plans for the month. Many thousands of school principals required teachers to hand in plans for approval. The idea is still very much alive. Several publishers have planbooks which are sold by the thousands.

The progressive group brought a reaction against the pre-planned course of study and the pre-planned unit. Some even went so far as to say that pupil activity could not be pre-planned and that any such planning was more than likely to be abandoned by intelligent teachers since individual differences made it impossible to carry it out.

Into this scene the source unit made its way. In a sense it is a compromise or perhaps a device without a philosophy, a technique which may be used advantageously by either those who do "unit teaching" or those who "teach by units." It is defined¹ as

a preliminary exploration of a broad problem or topic to discover its teaching possibilities. It is not an outline of work to be done by any one class over a definite period of time. Suggestions may be drawn from it for the work of many different classes in different fields of study or in the "core curriculum." Bits of it may be drawn into the work of a class at various times from the seventh grade through the twelfth. In planning an actual teaching unit suggestions may be drawn from several source units. . . . It is assumed, of course, that such units will be planned cooperatively by pupils and teachers, utilizing source units only as one source of suggestion. . . .

A source unit usually contains some analysis of the problem or topic under consideration to show its relationship to common and recurrent problems of children and of society. It may include lists of pupil needs and interests which may give rise to the study of this problem, and lists of desirable changes in pupil behavior which may be affected by this study. The heart of a source unit is usually a list of possible activities and experiences to meet these needs and interests and bring about these changes in behavior. There may also be a bibliography of helpful materials and suggestions for evaluation.

A source unit is a record of the exploration made by a teacher or a group of teachers and curriculum workers, of the

¹ BIDDICK, MILDRED. *The Preparation and Use of Source Units*. New York: Progressive Education Association, 1937, p. 3.

needs of pupils within some broad area of living, of ways in which it is believed those needs might be appropriately met, and of ways for determining whether or not they can be met. Each source unit should contain many more suggestions than could be incorporated into the work of any class. It is intended to help a teacher to review quickly the significant phases of some area of living, and to suggest to him a multitude of things that he and his pupils might do to enrich their living within that area.

The source unit is peculiarly adapted to those school situations where the work of a particular class is determined cooperatively through frank and intelligent discussion by pupils and teachers. The source unit provides a multitude of leads, and yet it leaves to the persons most closely concerned — pupils and teachers — the task of planning their own educational program in particular situations.

According to Miss Biddick¹ there are certain elements typical of source units, which are essential to the purpose they are destined to serve:

1. A statement of the significance of the area of living covered by the unit to the whole social scene and of the challenge of that area to the work of the school.
2. A list of suggestive questions which indicate some of the real concerns of pupils in this area of living.
3. A summary of the general types of behavior which represent adequate adjustment in this area and which constitute the objectives toward which the work of pupils is directed.
4. Some exposition of the scope of the unit, either indicated by a listing of possible areas of exploration, or made evident through the organization of the experiences of the unit, or shown in the table of contents.
5. An extensive list of possible experiences of activities which might contribute to the solving of problems in this area and which would tend to result in the type of behavior desired.
6. A list of suggestions as to methods and available instruments for the valuation of growth toward the desired types of behavior.
7. A list of materials that might be used in the development of unit-books, magazines, films, records, excursions, speakers, and the like.

¹ *Ibid.*, p. 5.

The reader will be interested to know that the source unit comes from the high school group and originally aimed to serve only the high school pupil. Nevertheless it is quite as useful for the elementary school teacher, for those who are torn between the demands for detailed pre-planned outlines, and for those who scoff at any planning. Its use, as Miss Biddick describes it, certainly makes it acceptable for unit teaching.

V. THE UNIT AND THE CORE CURRICULUM

It would probably be unwise to close this chapter without saying a word about the core curriculum. We have omitted the phrase itself because it has no standard connotation; but as a matter of fact we have fully explored the idea in our detailed description of large subject-matter areas in the illustrative programs of Chapter 3. And further, since unit teaching cuts across all subject-matter areas according to pupil needs and pupil growth, a core curriculum in such a program is quite unnecessary.

Nevertheless, the core curriculum idea is making a contribution; nothing has been more helpful in breaking down barriers between subject-matter areas. It makes it possible to develop relationships and to explore in parallel such subjects as literature and history, social science and physical science, and so on. The core accomplishes, through its elastic organization and its broad concept of proper content, much more than was accomplished under the early subject-matter schedule.

For most subjects more time is allotted within a given period of instruction organized on the core basis than in the typical subject-matter class. The core program provides opportunity for individual and group work through the very simple expedient of allowing time for it. This device is also found in the illustrations provided in Chapter 3. The social studies period in the California program, the social living period in the Leonard-Miles-Van der Kar schedule, the first period in the Alabama grade program and in the rural school program, are all characteristics similar to core thinking.

Actually, when teaching is carried out under the unit plan there is no necessary difference between it and teaching under

the core program. We might say that the ideals of the two are parallel. Therefore we may conclude that the unit plan within a core organization provides the best work opportunities, the best way of developing and achieving group goals, and the best way of providing for individualized experiences. Further advantages of a combination of the two may be found in the way it can utilize teacher resources and in the provision of opportunities for teachers and pupils to work together on common goals. This is an experience which has been too rare in former concepts of instructional and educational organization.

VI. IN CONCLUSION

Schools, during the last century or so, have emphasized the acquisition of factual material. This, in itself, is not necessarily bad. All of us must know many facts and know them well in order to go to and from our homes, to accomplish our daily routine tasks, and even to do such simple things as dressing ourselves and securing food. It was the way in which the facts were learned and the emphasis which was placed upon their acquisition as a primary function of the school that have been objectionable.

Facts, after all, are worth while only as they contribute to effective living in our form of civilization. They are thus tools to be used in the achievement of the more fundamental goals of well-rounded physical development, health, mental growth, social adjustment, personality development, character formation, worthy home membership, balanced living, and emotional balance.

So, too, with the skill subjects such as reading, writing, expression, spelling, and arithmetic. As they contribute to the goals previously set forth, they are highly desirable. Not used at all or used unwisely, they are valueless or even negative in net results. Certainly the child should not learn how to read unless he has a worthwhile use for reading. There would be no good to the individual or to society in having taught reading to a youngster who ends with a life sentence in a penitentiary or who is committed to a mental hospital.

The new education diverts attention from the teacher as a drill-master to the child as a living, purposive, growing organism. Instead of being one who sets tasks, hears recitations, and maintains order, the teacher is a guide and counsellor. Instead of being a passive hearer and reader, the child is an active participant in planning, executing, and evaluating. Such is the basic idea in unit organization.

Children must learn many things besides facts. They must learn how to attain and keep healthy, normal bodies; how to get along with their fellows; how to express their ideas forcibly and clearly; how to work together and play together; how to achieve and retain a healthy attitude toward society and toward life in general; how to help maintain the best possible form of democratic government; and how to live according to the generally accepted standards of society.

Children must learn these things gradually under adequate guidance. They must be given ever-increasing responsibility in setting goals, devising techniques, and evaluating results. They must learn to govern themselves as individuals and to participate in the government of the group. Such things come, not suddenly, but through gradual practice, and are facilitated by subject-matter integration.

SELECTED REFERENCES

1. BIDDICK, MILDRED. *The Preparation and Use of Source Units*. New York: Progressive Education Association, 1937.
2. COURTIS, S. A. *Philosophy of Education*. Ann Arbor, Mich.: Brumfield and Brumfield, 1935.
3. CUBBERLEY, ELWOOD P. *Public Education in the United States*. Boston: Houghton Mifflin Company, 1919.
4. KELLER, J. A. *Procedures in Large Unit Teaching* (Curriculum Bulletin No. 4). Montgomery, Ala.: State Department of Education, 1937.
5. *National College of Education, Curriculum Records of the Children's School*. Evanston, Ill.: National College of Education, 1940.

Part II

SUBJECT MATTER FOR GROWTH
AND LEARNING

6

The Skill Subjects: Reading

I. OBJECTIVES IN READING

FORMERLY regarded as an end in itself, reading is now generally recognized as a means for achieving broader goals. The purpose of teaching reading is not only to teach children to read but to provide them with a useful skill by which they may learn to live better, to come to a deeper understanding of life, and to enjoy and enrich life to a greater degree. Stated broadly, its purpose is to further individual and social development.

The story is told of a particular school which was especially blessed with facilities for teaching reading. It had mechanical devices for studying eye-movements, for projecting words, and for surveying eye span. It had a psychological clinic and one of the finest health clinics ever available to any school. It had a well-planned testing program, and an elastic type of organization which permitted regrouping of children at frequent intervals in accordance with their changing needs. It had special remedial classes.

This school became very proud of its reading program. Achievement tests both in the school itself and in state testing programs indicated that its pupils through all grades were superior to the norms established as the average of thousands of scores made by children all over the country.

One of this school's experiments was a study of the reading interests of its graduates, most of whom, because of the social setting, happened not to go to college. The results of the survey were greatly surprising and notably disappointing. Comic stories in daily papers, "funny" books, and cheap pulp magazines of the adventure and confession type furnished the bulk of the reading matter for these former students. The school had lost sight of the fact that reading

skills are only secondary to the broader objectives of instilling good taste in reading materials and of building the desire to read worthwhile papers, magazines, and books.

One of the objectives to which reading can contribute is training in citizenship. This should lead to an active, functional understanding of and participation in local, state, and national government. Ability and the *habit* of reading the informative sections of the better newspapers and such books and magazines as can contribute to one's general culture or to one's understanding of the community in which he lives, would seem to be essential in building a tool for good citizenship.

Most parents and teachers want children to be able to enjoy themselves and to be provided with the means of acquiring happiness. Reading is a profitable and enjoyable activity in proportion to the development of the individual. Thus again the skill itself is secondary to the larger aim.

These statements are not intended to minimize the importance of reading skills. It is realized that they are of vital consequence. What is attempted is to point out that reading skill is only a part of the picture. If reading instruction is to function on a high level, then it must be seen in its over-all relation to the development of the individual.

II. THE PROBLEM OF READING

According to published reports many children fail in reading. As stated by Hildreth:¹

Twenty to twenty-five per cent of first-grade children fail annually, chiefly because of reading difficulty. In a certain school, nearly all the first-grade children fail and then have to spend two years repeating the work of the first year. Retardation figures in one third grade showed that seventy per cent of the pupils had repeated one or more semesters, chiefly because of reading failure. Upper grade reading is unsatisfactory because children fail to profit from premature instruction in lower grades. The reading acquired under these conditions does not function.

¹ HILDRETH, GERTRUDE. *Learning the Three R's*. Minneapolis, Minn.: Educational Publishers, Inc., 1936, p. 136.

There is no doubt that the elementary school quite generally sends youngsters to junior and senior high school when they cannot read well enough to comprehend much of the required content material. Although in the past the secondary school has not admitted that reading was in any sense its concern, this attitude is now changing.¹ Some pupils have gone through high school with a decided lack of reading ability, and not a few of them have had to use all kinds of subterfuges, such as cheating and having others read lessons aloud to them, to be finally able to sit on the graduation platform. And the problem is not confined to the high school. Some of these youngsters with a definite deficiency in reading land in college.

The New York public schools have for years conducted a survey of their students who were shortly to enter the ninth grade. The tests for one recent year revealed that while the median reading grade for these pupils was about 9.14 in grade level, some 31 per cent of them were below as much as eighth-grade level, and 20 per cent were below seventh-grade level. More than 5 per cent could not read as well as the average sixth grader, and there were a few who read with only fourth-grade ability. The children were, on the average, up to normal expectations and yet many of them could not read well enough to do most of the work expected of them. One can only imagine the difficulties that children whose reading levels are at third-, fourth-, fifth-, and sixth-grade levels must face in the high school content subjects.²

The frequency of disability in reading has been demonstrated in many other research studies. Gray revealed that 22 per cent of the ninth-grade pupils in a Chicago suburb were below the ninth-grade reading level.³ Stone likewise

¹ High schools are beginning to recognize that differences in abilities result in differences in achievement and consequently they do not expect all incoming pupils to read at the same level of achievement. Consequently high schools, and colleges too, are realizing that they must share the responsibility for helping students with their reading. Reading clinics and remedial devices are being utilized more and more at these upper educational levels.

² HARRIS, ALBERT J. *How to Increase Reading Ability*. New York: Longmans, Green and Company, 1941, p. 4.

³ GRAY, W. S. "The Nature and Extent of the Reading Problem in American Education." *Educational Record*. Supplement No. II. XIX: 87-104. 1938.

reports discouraging results.¹ Using the New Stanford Reading Test with all the children in the beginning part of the sixth grade in a small city, he found reading ability as low as second grade and as high as the tenth. Eighteen per cent were below their grade level, while 31 per cent were above.

Another report, from a Chicago public school in a rather average residential district, tells the same story. The social-economic background of the children was neither high nor low but rather that of skilled factory workers, store executives, and the like. Grade equivalents were worked out from scores on the Chicago Reading Test from two rooms selected at random (see Table II).² A glance at this table reveals the wide range of achievement and the low reading level of some of the pupils. These groups, too, on the average are "up to the norm" but include a great variety of reading levels.

TABLE II

GRADE 5A		GRADE 7A	
<i>Reading Level</i>	<i>Number of Pupils</i>	<i>Reading Level</i>	<i>Number of Pupils</i>
10B	2	12A	2
9A	0	12B	4
9B	1	11A	1
8A	2	11B	3
8B	1	10B	2
7A	2	9A	1
7B	7	9B	5
6A	2	8A	2
6B	8	8B	5
5A	4	7A	6
5B	4	7B	4
4A	1	6A	1
4B	1	6B	2
3A	2	5A	3
3B	2	5B	0
2A	1	4A	0

¹ STONE, CLARENCE R. *Better Advanced Reading*. St. Louis, Mo.: Webster Publishing Company, 1937, p. 20.

² Unpublished data gathered by the authors.

The problem is also highlighted by Selective Service reports from World War II. In the first year of the war 200,000 draftees were rejected because of functional illiteracy, that is, inability to read simple material and to write in a simple, legible manner.

III. FACTORS AFFECTING READING ACHIEVEMENT

The problem as presented seems hopeless. Actually, much is being done to find ways of treating the situation. Let us approach it by studying those factors that govern and condition growth in reading. What are these factors? What factors produce changes in the growth curve of a child in reading as he progresses from grade to grade? What relation do sex, intelligence, and interest have upon reading performance? This section attempts to answer some of these questions and in a sense shows possibilities by which the general situation can be improved.

Both boys and girls show wide variation in the ages at which reading begins.¹ Utilizing forty-three pairs of boys and girls, each pair with equal I.Q.'s at the time of selection, it was found that the range of beginning reading ages extended over a period of approximately fifty-five months for both boys and girls, from about forty-five months of age to one hundred months or from about four to eight and a half years of age (Figure 14). All these children participated in the same kind of group reading program, and even in the first grade serious efforts were made to get all of them to read, regardless of their ability differences. All of them read at least up to the grade level corresponding with their mental age level in the later elementary grades. Moreover, there was but little relationship between their age of beginning reading and their later (sixth grade) reading age level, although a close relationship was found between their age of beginning reading and their measured I.Q.'s.

Everyone has heard someone say that children differ in their rate of growth in reading. Utilizing a technique² which

¹ For techniques of determining beginning reading ages, see "The Nature and Character of Pre-Adolescent Growth in Reading Achievement." *Child Development*. II: 71-114. Feb., 1940.

² *Ibid.*, pp. 90-91.

analyzes growth in terms of per cents of development per month, it was found that some children grow at a rate three times that of other children. In terms of years, some children develop fully their pre-adolescent growth cycle in reading

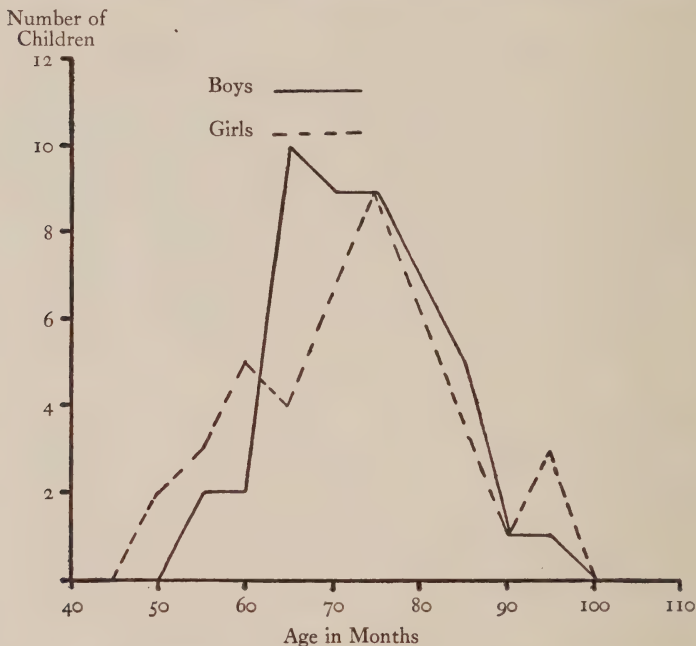


FIGURE 14. Individual Differences in Time at Which Reading Growth Begins. (Showing Distribution by Sex of Boys and Girls Matched According to I.Q.)

in about three years, and others require as much as nine years. The study finds very little relationship between this characteristic of maturity and the child's mental age.

The same study indicates that children vary in the maximum toward which they are growing in reading, just as they vary in their height maxima, their weight, and so on. This is the underlying point in the maturity concept which denies the idea of mastery as advocated by the acquisitionists in reading. It is not generally known, for example, that in a given test of one hundred items, repeatedly given over a period of time, not all children will or probably can, no matter

how many times it is given, finally approximate the score of one hundred. Actual individual graphs will show that the curve for one child, for example, will "round off" at eighty, another at sixty, and another at ninety. Among the boys and

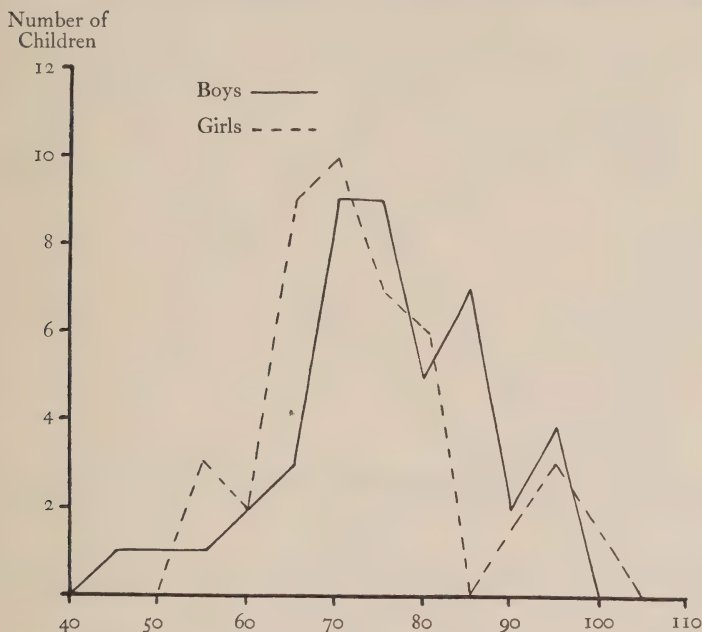


FIGURE 15. Individual Differences in Pre-Adolescent K-Reading Values. (Showing Distribution by Sex of Boys and Girls Unmatched According to I.Q.)

girls studied, final scores on the Stanford Tests ranged from 40 to nearly 110. These variations in ability were not noticeable in the early performances, but correlated highly with the intelligence of the child.

Studies of the effect of intelligence upon reading performance are too numerous to mention.¹ Let it suffice to state that reading achievement correlates highly with measures of

¹ See DURRELL, DONALD D. *Improvement of Basic Reading Abilities*. Yonkers-on-Hudson, N. Y.: World Book Company, 1944; BOND, GUY L., and BOND, EVA. *Teaching the Child to Read*. New York: The Macmillan Company, 1943; HARRIS, ALBERT J. *How to Improve Reading Instruction*. New York: Longmans, Green and Company, 1940.

intelligence. The range of positive correlation lies somewhere between the $+.489$ found by Gates¹ and the $+.720$ reported by Reed.²

In general the reading curves of children differing in intelligence proceed about as shown in the two following figures,

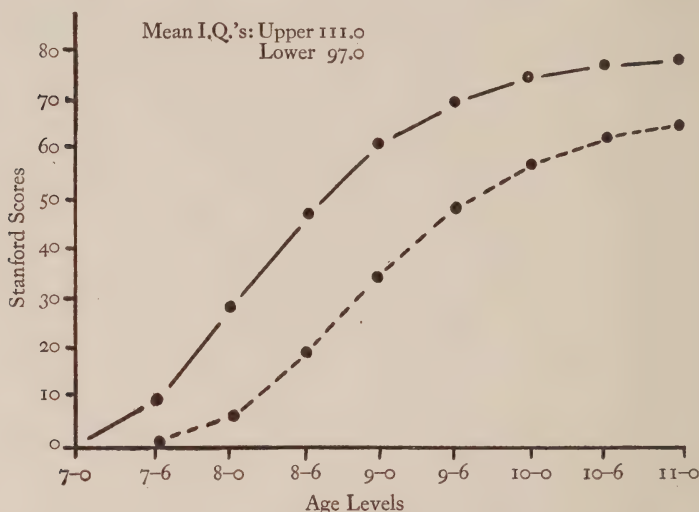


FIGURE 16. Comparison of Reading Performances of Two Groups of Boys at Different I.Q. Levels

which illustrate reading differences for both boys' and girls' groups (see Figures 16 and 17).

The differences in the curves of the two groups for both boys and girls testify to the influence of intelligence as a factor in reading performance. This experiment points out that the more intelligent children are growing toward higher maxima, and begin and end their elementary school reading development at an earlier age than do the lower groups.

Utilizing Courtis's technique for a mathematical analysis of the curves shown,³ the authors found very high positive

¹ GATES, ARTHUR I. *Psychology for Students of Education*. New York: The Macmillan Company, 1925, pp. 441-443.

² REED, H. B. *Psychology of Elementary School Subjects*. Boston: Ginn and Company, 1927, pp. 68-69.

³ COURTIS, S. A. *The Measurement of Growth*. Ann Arbor, Mich.: Brumfield and Brumfield, pp. 155 and 162.

correlations between the maximum toward which the children are growing and their intelligence quotients (see Table III). Significant negative correlations, from .41 to .59, were likewise found to exist between their intelligence levels and the

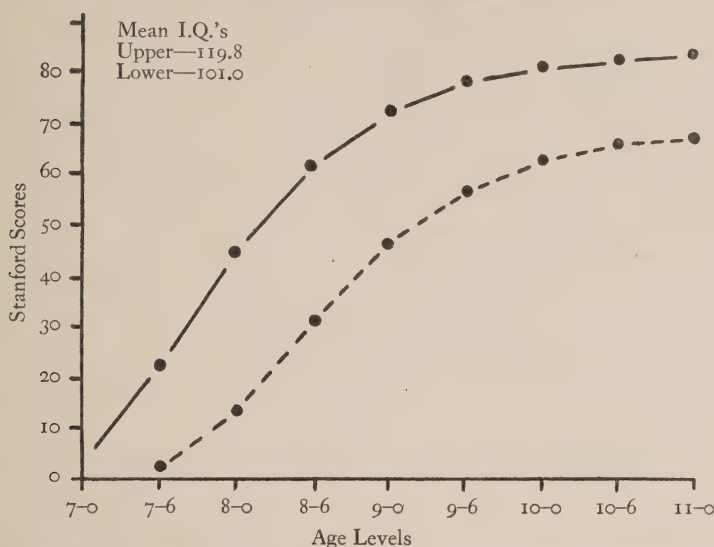


FIGURE 17. Comparison of Reading Performances of Two Groups of Girls at Different I.Q. Levels

ages at which they began and completed their reading cycles.

As indicated by the curve of development of the lower groups, achievement is just as possible as it is for the upper groups. Except for the extremely feeble-minded, it appears that every child, unless otherwise handicapped, can learn to read. The reading of mentally retarded children is slow and halting in comparison with that of children with more normal intelligence, so that a great deal of individual tutoring is often necessary; but growth toward their own personal maximum level of achievement is possible and should be expected.

Interest is one of the outstanding factors conditioning the reading development of the child. As an illustration, let us cite the following case.

TABLE III

COEFFICIENTS OF CORRELATION BETWEEN I.Q.'s AND ELEMENTS
OF GROWTH IN READING ACHIEVEMENT AS MEASURED
BY STANFORD SCORES

<i>Elements of Growth</i>	<i>Boys' I.Q.'s</i>	<i>Girls' I.Q.'s</i>
I _R	+ .12	+ .05
2 _b	- .41	- .51
3 _c	- .0001	- .0210
4 _T	- .45	- .59
5 _K	+ .731	+ .737

I_R — Isochronic Rate of Growth

2_b — Age at which Growth Begins

3_c — Number of Months Required for Complete Maturation
(99.0%)

4_T — Age at which Growth is Completed

5_K — Maximum Score toward which Growth is Progressing

A boy brought up in a rural school where the teacher had little time to give him individual attention was making rather slow progress in his formal reading efforts. Yet his interest was not entirely unaroused, for he loved to have his mother read to him. He particularly appreciated, about the time he was in the third grade, the stories in a current boys' magazine. The mother at this time began the practice of reading only the first parts of stories aloud. When the most interesting part was reached, she would say something like, "I have to feed the chickens now. You'll have to read the rest yourself."

"But I can't," would be the reply.

"Go ahead and try," his mother would encourage, "and I will help you with the hard words when I come back."

Under this type of tutelage, with some help at times, he was soon devouring the magazine. He looked forward to the day of its delivery, and the road home seemed very long on the afternoon of its arrival. From this magazine, the boy went on to read a great variety of magazines and books.

The story of this boy suggests several factors that might be thought of as really the most effective of all in conditioning reading development: teacher-pupil relationships, pupil-home relationships, pupil-pupil relationships, and other environmental effects. Such factors are of vital importance in stimulating interest in reading as a tool through which meanings of the printed page can be attained and in determining a happy, well-balanced adjustment for the child. The child who comes from a home where the parents read a wide variety of good papers, magazines, and books is conditioned to the pleasure and knowledge to be derived from reading by the time he starts school. Again, his relationship to a stimulating, effective teacher has great influence on his general satisfaction with school and his desire to learn to read. Lastly, the friends and acquaintances of his own age have considerable to do with determining his general happiness, adjustment, and attitude toward reading.

IV. STAGES IN READING DEVELOPMENT

The National Committee on Reading has described five stages in reading instruction.¹ These are: first, reading readiness; second, the initial stage in learning to read; third, a stage of rapid progress in fundamental reading habits and attitudes; fourth, a period of wide reading that greatly extends and enriches the child's experiences; and fifth, a stage of refinement which ordinarily comes during high school or college years. While some authorities recently have reduced the number of reading stages to four, the five-stage concept is apparently still the most widely accepted.² It fits the periods of maturity discussed in the following paragraphs.

Although these stages are not hard and fast divisions through which every child passes at the same chronological age, they match the developing maturity of the child. This relationship for a normal child may be shown as follows:

¹ "Report of the National Committee on Reading." In *Twenty-Fourth Year Book of the National Society for the Study of Education*. Bloomington, Ill.: Public School Publishing Company, 1925, Part II.

² For a detailed discussion of the teaching of reading in various stages the reader is referred to BROOM, M. E., and others. *Effective Reading Instruction in the Elementary School*. New York: McGraw-Hill Book Company, 1943.

<i>Period of Maturity</i>	<i>Reading Stage</i>
(1) End of babyhood cycle	(1) Reading readiness stage
(2) Beginning of pre-adolescent cycle	(2) Initial stage in learning to read
(3) Rapid pre-adolescent growth	(3) Stage of rapid progress
(4) End of pre-adolescent with merging of adolescent cycle	(4) Period of wide and enriching reading
(5) Advanced adolescent period	(5) Stage of refined reading

Most children in the kindergarten are beginning to reach the end of the babyhood cycle. In the first grade most of them are beginning a new period, but many still remain in the previous cycle. The latter need reading readiness activities, while those who are beginning the childhood or pre-adolescent cycle are ready to enter the second stage of reading, the stage which introduces formal reading activities. Though all children pass through about the same stages of maturity, they do not all do so at the same chronological age. The beginning growth following the babyhood cycle is slow, so that the introduction to reading must also be slow in order to parallel the development of the child. The third stage—rapid progress coming in grades three, four, and five—generally is accompanied by a rapid rise in the growth pattern, whereas the fourth stage, that of developing interests and reading, is not followed by great increases in apparent physiological growth or necessarily large amounts of achievement in reading. The fifth stage, beginning with adolescence well under way, varies greatly among individuals and is characterized, when properly developed, by the best reading of which the individual is capable. Graphically, the relationship between the maturing child and his reading stages are shown in Figure 18.

STAGE 1. The readiness stage of reading, or what might better be called the preparatory stage, is the period when the child is emerging from the babyhood cycle and is getting ready for a new period of growth. Maturation, then, is the basic factor with which the teacher is most concerned in

introducing reading activities. Without sufficient maturation the child will never begin to read, unless reading becomes a memory exercise with scarcely any meaning to the child and with no permanent effects.

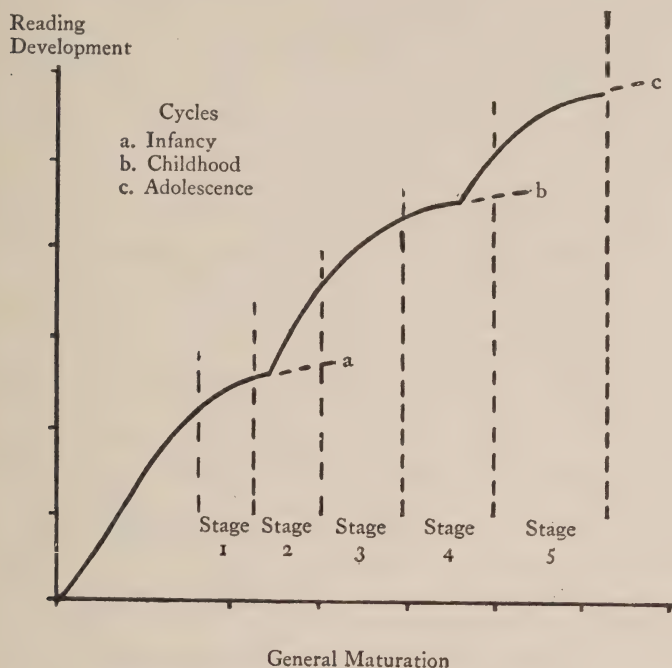


FIGURE 18. Relation of Reading Stages to Period of Development

Reading readiness has been given many complex meanings. When the concept is applied to those activities of the school used in preparing the child to read, it may be defined rather simply as those preparatory activities which will assist him to make rapid progress when he begins his formal reading instruction. To spend a great deal of time considering his intelligence, maturity, and experiences is to muddle rather than to clear the problem. The child is with us, and he must be taught to read. What is called the "readiness period" is the period at which he does not have the equipment for reading. It is questionable just how readiness activities can hasten the development of skill in reading. Certainly they

cannot hasten the beginning of the pre-adolescent cycle. It is probable, however, that experiences can be provided before reading, perhaps just before, which make reading more meaningful when it becomes developmentally possible.

What are some of the indications of maturity which may be used by teachers to determine whether or not a child is ready to learn reading? Although there is considerable debate in the matter, the following are acceptable to most investigators:

1. Range of information about such common things as pets, the farm, the home.

2. Ability to see and use relationships such as the automobile and a picnic.

3. Extent and richness of vocabulary; language ability is an important factor in learning to read.

4. Memory span of ideas; the ability to remember such things as that pets must be fed.

5. Ability to remember word forms; children now learn to read by seeing configurations.

6. Ability to see likenesses and differences in words; discrimination in configuration is of the greatest importance.

7. Ocular-motor control; the ability to control the eyes and the muscles in general.

8. Motor speed and coordination; quickness and coordination of reaction time.

9. Auditory discrimination of words and sounds; the ability to distinguish between words and sounds that are heard.

10. Ability to blend sounds; that is, putting sounds together to form words.

11. Auditory memory; that is, memory span of sounds that are heard.

12. Attention span; the ability to concentrate for fairly long periods.

13. Ability to copy; this depends largely upon muscular coordination.

14. Ability to repeat sentences; both memory span and speech efficiency enter into this ability.

Although all these factors must be given consideration, no one has as yet worked out their relative importance in deter-

mining whether a child is sufficiently mature to begin reading. A future possibility, which has been advanced by some child specialists, is the utilization of developmental records. Were such records available to first-grade teachers, it would be simple to graph the data and determine the child's maturity status. If this curve of development is still "rising," readiness activities are called for. If, on the other hand, his status is on a plateau or beginning a new cycle, formal reading activities may be prescribed.

Investigators have known for years that not all children are ready at the same chronological age to be taught reading. The popularity of the intelligence test initiated studies which attempted to answer the question of "when" by attempting to establish a basic mental age as a criterion for first successes with reading. Excluding maturity, mental age has been found to be the most significant factor in determining a child's probable success in first-grade reading.¹

According to Harrison, a child with a mental age of six years and six months is at the period for optimum profit in beginning reading.² This does not mean, however, that all children with a mental age of six and a half years are ready for reading. Certain children at this age may not have reached sufficient development in their growth cycle or may be immature in other ways.

Factors related to mental age which tend to bring about such differences are a child's ability to see how words are alike and different in configuration, to remember what he sees and hears, and to think in terms of ideas such as kindness to pets and helpfulness to mother, and to respond to abstract requests such as to take a note to the principal's office or to arrange the chairs for a story-telling period.³

In many of the skills basic to elementary school teaching, girls are superior to boys. Careful studies have indicated that this is true in language development, although boys are

¹ DEPUTY, ERBY C. *Predicting First-Grade Reading Achievement* (Teachers College Contributions to Education No. 426). New York: Bureau of Publications, Teachers College, Columbia University, 1930, p. 45.

² HARRISON, M. LUCILE. *Reading Readiness*. Boston: Houghton Mifflin Company, 1939, p. 7.

³ HUGGETT, ALBERT J. "An Experiment in Reading Readiness." *Journal of Educational Research*. XXXII: 263. Dec., 1938.

better in arithmetic and mechanical ability.¹ Girls generally learn to speak at an earlier age than boys, and this language differential is apparently carried throughout the elementary school.²

These same differences are found in studies of reading readiness. One investigator found that girls made consistently higher scores on the Van Wengen and Metropolitan Reading Readiness Tests as well as on the Rhode Island Intelligence Test.³

In Figure 14 wide ranges of age for beginning reading were reported for both boys and girls. According to the same study, boys were found to be slower to begin reading. For unmatched groups, a difference of 1.2 months was found favoring the girls, and for matched groups, a difference of .4 month.⁴ These two studies seem to indicate that girls, in general, are ready to read at an earlier age than boys. Since reading programs have traditionally been set up on the basis of what the better pupils can do, it follows that school standards of the past, in reading, have worked to the disadvantage of boys, who were not ready to begin to read at as early a chronological age as girls. In other words, standards were based on what girls, who matured at an earlier chronological age, could do, and the boys were labelled "dumb" because they had not matured sufficiently to meet those standards.

If success in reading does not come when all signs such as mental age, chronological age, sex, and comparative maturity indicate that it may be expected, other factors must be studied.

One of these is lack of background. It has been shown many times that children do not learn well unless there is present some background of knowledge of the kind being taught. City children who have never seen a farm, comprehend rural stories with the greatest of difficulty. Rural children who have never observed the skyscrapers, the elevated or subway, the crowded streets, the bustle of the metropolis,

¹ FREEMAN, FRANK S. *Individual Differences*. New York: Henry Holt and Company, 1934, Chapter VI.

² *Ibid.*

³ HUGGETT, *op. cit.*, p. 263.

⁴ MILLARD, C. V. "The Nature and Character of Pre-Adolescent Growth in Reading Achievement." *Child Development*. II: 86-89. Feb., 1940.

are unable to get much out of reading stories about the city. Children do not have to have complicated or intensive knowledge about the objects of their study but they must have enough at least to visualize what they are reading.

Another factor is the whole influence of conditioning in its relationship to reading readiness.¹ The child who has had unpleasant experiences with reading because he has been forced to read or because he has had uninteresting stories read to him, is not likely to have much desire to acquire this skill. The pupil who has had personality conflicts with a teacher will not want to do anything that she wants him to do. The youngster who dislikes going to school because it is a place of confinement which does not allow immature muscles to exercise, or because he does not have any fun there, will naturally but perhaps unconsciously associate reading with the general unpleasantness that school conveys to him. The child who is insecure in his home life because of constant thwartings, because of family quarrels, because of discussions of economic problems, or because he lacks one of his parents, has been frequently reported in no condition to take to reading because his mind is occupied with fear and worry.

Thus conditioning, whether represented by home conditions or by early treatment in school, is important in determining readiness for reading. A child badly conditioned or stimulated to achieve beyond what should be expected at his stage of development, will have difficulty in beginning reading even when other factors are favorable.

There are many things a teacher can do to prepare for reading readiness. Long-time and short-time programs are necessary, depending upon the maturity of the child and other factors in his case. In any list of desirable activities resourceful teachers include those which lead him to increase his range of information and vocabulary, such as trips, followed by stories of what happened and what was seen, an occasional drill on elementary word forms, and help in seeing likenesses and differences; activities with scissors, pencils, and other instruments which assist in developing motor control, speed, and steadiness.

¹ See WITTY, PAUL, and KOPEL, DAVID. *Reading and the Educative Process*. Boston: Ginn and Company, 1939.

Physical and emotional factors also must not be overlooked. Teachers should do all in their power to bring the physical condition of the child up to normal and to correct nervous and emotional difficulties. As in any problem involving the individual, the whole individual has to be studied if reading readiness is to be facilitated. No teacher can take into account intellectual development exclusively.

As pointed out by the charts of Harrison,¹ developing interest is a predominant goal in a reading readiness program. One of the best means for doing this is an attractive display of modern children's books with their bright covers and large print, as well as a judicious selection of colorful posters and pictures.

STAGE 2. For most children this stage begins some time during the first grade and continues to or into the third grade. Although there are definite maturity limits, there can be no specific grade or age enclosures since the maturity requirements for reading readiness are not the same for all children.

While investigations have been made into the relative value of different approaches to the first reading lessons, little has been determined in respect to the relative values of different series of textbooks.² Since, however, so many include well-integrated helps, such as charts, flash-cards, picture books, and supplementary readers, there seems to be no valid objection to the use of any good series. Most teachers could probably devise satisfactory aids themselves; but unless they are skilled, they would waste time and energy in doing so.

Instruction in reading is based upon a vocabulary content of familiar objects and experiences. Most modern series start with a family, pets, school, or other groups of concepts and associations which have almost universal interest and meaning for children. Although there must be word drill, stress is placed upon the recognition of thought units rather than upon isolated words. Book activity is supplemented by accounts of incidental activities both in and out of the class-

¹ HARRISON, *op. cit.*, pp. 106-128.

² GRAY, W. S. *Summary of Investigations Relating to Reading* (Supplementary Educational Monographs No. 28). Chicago: Department of Education, University of Chicago, 1925, Chap. VIII.

room. The skillful teacher, in leading up to the actual process of reading, utilizes children's stories about their families, pets, and happenings on shopping trips, visits, and journeys to and from school.

School journeys are taken to secure information about subjects in which the children are interested. As a result, children acquire an additional vocabulary which carries over into reading activities. Accounts of the trips are written co-operatively by pupils and teacher, with the teacher doing the actual writing. These accounts are pasted on charts and used in reading classes. Usually the children are proficient enough in written language to be able to write individual accounts which are made into books. Regular classroom books with a sufficiently paralleling word list can be read to supplement and add to the information gained.

A point which should be mentioned here, although it is too broad to be treated exhaustively, is the use of phonetics. Controversy rages first in favor and then in opposition. At present nearly all authorities agree that study of phonetics is valuable in certain individual instances but in general reading instruction should be used only as a supplementary tool. When a child has made some progress but is still having difficulty in attacking new words, phonetics may be brought into the situation in a way which will prove helpful. As an isolated activity, that is, scheduled for a separate class or a separate activity as in the case of spelling, it seems to have no particular value.¹

It might be argued that children in the first grade who cannot read should be considered in the course of the discussion in the section dealing with reading readiness and not at this point. It is because such children may be found among those that are beginning to read that we risk repetition. These less mature children must be treated much as the whole group was treated earlier in the year, that is, before any of them were ready for formal reading. They should not be separated entirely but be allowed to mix with beginning readers and encouraged to take part in regular class projects. By all means they should engage in social activities and be

¹ GATES, A. I. *New Methods in Primary Reading*. New York: Bureau of Publications, Teachers College, Columbia University, 1928, Chaps. VI-VIII.

made to feel a part of the group. When the rest engage in formal reading, these others should participate in activities which encourage an interest and create a desire for reading. Much published material is useful for them and, combined with the teacher's own personal resources, provides adequate activities at this stage of development. They should be encouraged in every way to become accustomed to working and playing together. It should be no disgrace to the child to be a non-reader in his first or second year at school. Unless other factors are operative, his status is the result of a certain kind of immaturity although he is possibly normal in other aspects of growth.

STAGE 3. By the time most children have reached the latter part of the second or the first part of the third grade, they have acquired fundamental skills and habits in reading. They therefore enter a stage in which reading rather than being an end in itself becomes a pleasant tool with which to acquire information.

Oral reading assumes less importance at this stage because most children can recognize words quite readily. More emphasis can thus be placed on silent reading. This is the stage in which children pursue individual interests, not only in their reading but in meeting needs in other areas. It is important, then, that a wide range of materials be made available on all possible interests.

Some grouping of children is frequently found helpful because in this stage individual differences tend to widen. Whenever possible, however, projects and units covering broad subject-matter areas should be employed in order to minimize the number of separate groups. Much of the formal work can be of the personalized, helpful type which demands much knowledge of the progress of each child.

The type of reading will be broader where unit teaching is employed, since the interests of children are constantly widening. Basic commercial materials are not so necessary for the competent teacher but may be found helpful for any child who seems to need flash-card review and chart drill. "Dictionaries" may be constructed and used during the latter part of this period, or commercial dictionaries may be employed.

STAGE 4. By the time the fifth grade has been reached, most children can read simple material quite readily. This stage calls for wide variety in subject matter and in difficulty because of wide maturity differences. Content subjects such as geography, hygiene, arithmetic, and literature demand reading; hence most of the reading instruction should take place in relation to children's purposes in connection with these subjects or with unit teaching which combines these subject fields. There is little justification for formal reading periods at this level except for remedial work, phonics, or dictionary drill, as individual cases demand. Reading is learned constantly in all the activities of the classroom. Skillful teachers are alert to opportunities for correlating reading with every possible area of instruction, in fact with everything the child does.

Commercial materials may be used for supplementary reading since all children do not have the same books. There is no justification for limiting instruction to a particular series of readers; it is more desirable to have on hand a few copies of many different series.¹ Children should pursue individual interests and do much supplementary reading with materials not too difficult for them. This requires a great variety of books and magazines rather than a preferred or basic selection. The main purpose here, of course, is to provide much practice through the use of interesting materials.

STAGE 5. During junior and senior high school years most children are ready to explore even wider fields of interest and to refine the skills already gained. It must be recognized, however, that some will enter junior high school who cannot read with functional facility. This will be true as long as promotion is based upon a social-physical maturity development rather than upon academic status. Adjust as we may to individual differences, there will always be some children whose potentialities have ceiling limits which make academic status a poor criterion for promotion.

It might be argued that such children should not be promoted into the high school. In an earlier day there was no doubt as to the "proper" procedure: the child was held back.

¹ It is also desirable to have such material over a range of at least three grade levels.

Today we recognize the importance of social groupings and the effect of the child's losing his sense of security in being separated from his group. Further, we recognize that when the growth curve has begun to level off, very little will be gained by holding him back. Thus, the high school, by being able to meet his needs in other areas, accepts him and inherits his reading problems. High school teachers recognize the difficulty and, instead of protesting, are becoming willing to carry on where the elementary teacher left off.

V. THE SELECTION AND USE OF READING MATERIALS

One of the big tasks of the elementary teacher is certainly that of providing materials for a broad, comprehensive reading program. The solution, a decade or so ago, was easy in the light of knowledge at that time; each child was to have a reading book; all read the same selections, — mostly orally; when the book was completed, it was read through again. Gradually, supplementary readers were introduced to furnish additional material for bright children who had completed their regular books. At first, enough of these extra books were purchased to supply all the children; then partial sets of perhaps five or ten each were provided so that more variety could be obtained. Now we believe in a wide selection of books which are broad in subject matter, at each reading stage. Most of these may well be single copies, although there may be some need for several copies of one book. Reading is an individualized process, built on the theory that the child who finds something interesting that he can read fairly easily will want to read more and will ordinarily be able to do so with remarkably little assistance. Since the reading ability of any group is likely to vary from low to high by five grade levels, materials must be provided which have considerable range in difficulty.

What can the teacher do about this problem? Can Boards of Education be expected to supply all that is needed? How shall the teacher know what to order? What agencies can be expected to help? These are some of the questions that naturally arise.

The teacher herself can do most toward providing a sufficiency of varied materials. If she has the zeal of a true pro-



Learning to read without strain; the interest is evident on these faces.
(Courtesy of the East Grand Rapids, Michigan, Public Schools)

professional in acquainting parents with the need for such books and periodicals, they will be provided in some way or other. Boards of Education are almost always anxious to do all they can to encourage a teacher, even if they are not always clear as to the reasons for requests. Then there are state and county libraries from which books may be secured. The authors have known of city and village libraries which have been anxious to order books of interest to children if only some teacher would suggest what to buy. The libraries usually want books to be drawn out by individual pupils, but the teacher can see that children are provided with library cards and are taught how to make withdrawals. The

consistent use of library resources is a very valuable habit for boys and girls in elementary schools to develop.

Children themselves can often provide many excellent books if they are encouraged to bring to school copies for which they no longer have use. True, one usually gets some that are not of the best type in content, format, or illustrations; but even these may help some children.

Every elementary classroom should have a classroom library. Children need to have books constantly available for reference and for recreational reading. School libraries fill a need with their wider selection but they cannot completely take the place of the classroom library. In such schools children often have but one or two regular library periods a week, a brief allotment that assists in forming the habit of going to the library but that is inadequate for the child's total reading needs.

VI. GENERAL CONSIDERATIONS ABOUT TEACHING READING

There are great differences of opinion about the use of workbooks in reading. Some hold that they consist largely of busy-work which has no particular relation to the development of the child in reading. Others have felt that comprehension and word recognition are improved by the use of them and that the mechanical features of eye-span and eye-sweep are thereby improved.¹

Whether workbooks are important or not seems to depend on their type and the way they are used. Those that are intrinsic and fit into the reading program have certain values if used carefully. Their content should always be explained to the child, he should be helped whenever necessary, and they should be checked frequently to make sure that the youngster knows what he is doing. Workbooks which are merely handed out, but never checked, probably do not improve reading ability very much. Those used in the early grades which have no correlation with the reading content and vocabulary of the regular reading classes, certainly cannot be defended.

¹ DURRELL, *op. cit.*, p. 80.

Primary children probably need workbooks much more than those in the intermediate grades. Older children have so much reading to do in connection with history, hygiene, and geography that they neither need nor have much time for workbook activity. For children in the intermediate grades a large amount of reading of a wide range of subjects from books and periodicals is probably preferable to the narrow limitations imposed by workbooks.

VII. THE GOAL OF READING INSTRUCTION: MASTERY OR GROWTH?

A new attitude toward testing has recently brought out significant contributions to the problem of mastery versus growth in the development of learning skills. Instead of testing large numbers of children from the same grade level at a given time, the tendency today is toward consecutive measurements of the same children over a period of years. As a result, we are discovering new facts about the nature of the learning curve in reading.¹ These data indicate that children grow naturally toward definite maxima which are only temporarily affected by specific reading instruction. The conclusion is that learning, to be effective, needs to be identified with the child's own social-physical stage of maturity. The maturity concept, as contrasted with the mastery concept, holds that stimulating the child to read above this level is not productive of permanent learnings and borders upon arousing emotional frustration.

When efforts to develop reading skills are timed to the child's general curve of development and his achievement status, there results an emotionally satisfying compatibility with his interests and with his social-physical maturity. Hence the teacher, when other factors seem satisfactory, should not become alarmed if a child who appears to be normal seems to advance slowly. A teacher with this knowledge realizes the danger in using pressure to push the child toward higher, unnatural standards, and is aware that many children at first- or second-grade levels who seem to be slow in learning have nothing wrong with them. Their starting

¹ MILLARD, *op. cit.*, p. 100.

points are delayed because of immature development of some kind. Many of them will begin a period of rapid growth at the third-grade level, and by the fifth grade will outstrip others who began earlier but progressed at a much slower rate.

In the upper elementary grades a teacher may be disappointed with the apparent slowing down of the child's reading curve but may find a year later that the child has shown marked improvement. In analyzing this situation — and the authors have seen many such cases — a graph of the child's reading progress will indicate that progress in both grades was natural. The explanation is that a period of leveling off in the upper elementary grades is more often than not the maturing of the childhood cycle, whereas the second cycle of rapid growth is a natural accompaniment of adolescence. Such children need not be driven or given excessive drill, nor should teachers assume credit for rapid acceleration after such standstill periods. In terms of growth both phenomena are to be expected.

These new facts about the learning curve will undoubtedly have a marked effect on future reading instruction. Variation will be provided in the time at which reading instruction is begun, and account will be taken of individual differences in rates of progress and in the ultimate maxima which children will be expected to achieve.

VIII. IN CONCLUSION: A NEW EMPHASIS IN THE TEACHING OF READING

Not so long ago no one would have questioned the emphasis which considered reading as a process of learning certain basic skills taught independently of the other subject-matter fields. Most of the time of the teacher in the early elementary grades was occupied in attempting to inculcate these skills. Individual differences in maturities, in interests, and in needs were almost entirely unrecognized. The reading content was broken down into grade levels, and each child was expected to come up to that grade level regardless of his capabilities. The requirements for reading as in other subject-matter fields were standardized, the time required for learning special phases of the program was budgeted without

reference to the child's requirements, and all children were expected to achieve the same degree of mastery.

In these transition years, as a result of psychological and child growth studies, there is an increasing shift in emphasis from the mastery of reading skills toward the utilization of those skills as a means to a richer, more adequate life pattern. In those schools which have made use of the newer findings, the basic reading skills are not taught as ends in themselves with fixed standards of achievement at all grade levels; instead, they are so taught as to provide children with the technics for a better understanding and appreciation of their own interests and problems. Consequently, the various reading skills are introduced when the pattern of the child's life produces a need for a new skill.¹ As a result of the growing acceptance of this principle, certain fundamental reading processes formerly introduced at a low grade level do not appear until some time later, in some instances much later.²

In many schools at present, the need for skills grows out of activities which are intelligently initiated and planned with sufficient satisfying participation on the part of the children. In this type of school the textbook has a new function. Instead of governing the entire teaching activity, it serves as a guide or a device for providing desired information and help and for stimulating the interest of the child. Basic textbooks are now regarded by many as a rapidly passing characteristic of the old educational order. Pupils formerly read one or two books in a given field. Today the pupil finds a dozen or more available. Reading thus becomes a tool for obtaining information for which the pupils feel a need, or it becomes a recreational or a leisure activity.

In addition to the provision of several books in place of the so-called basic reader, other innovations are taking place. In the lower grades, reading materials are frequently developed from the experiences of the children themselves,

¹ The skill of the teacher in developing worthwhile and need-creative activities is as important here as it is in the actual teaching and presentation of the skills themselves.

² Much evidence is available to show that children who were not introduced to reading until late in the first grade or early in the second are able by the time they leave the elementary school to read as well as or better than children who started to read in first grade or kindergarten.

their own drawing and writing efforts, their scrapbooks, their cutting and pasting creations, and their worksheets, games, and puzzles. First-hand experiences, dramatic activities, discussions, and excursions utilize much of the time once given to formal reading.

The growth point of view in the teaching of reading gives full recognition to other conditions of learning besides teaching. One such condition is the child's total environment. Consequently, activities and experiences are attuned to those interests and needs arising from his particular environmental milieu. This point of view recognizes the environment as an aid to teaching through what might be called "incidental learning activities."¹ The school, therefore, seeks to complement and to coordinate its efforts with desirable aids already operating. As often as not, many learnings begin outside the school. It is then the responsibility of the teacher to see that the child's activities outside of school and his experiences in the school supplement and enrich each other. In this way, through an informal complementing of factors, children acquire skill in reading quite as effectively as through a routinized program of direct teaching.²

Flexible standards of pupil reading achievement are much more common today than in the past. Formal conceptions of what "Grade II" and "Grade IV" mean are beginning to disappear. Teachers are learning that the children of a typical grade represent normally a range of several years in achievement. They know, for example, that some children in Grade IV may find it necessary to work with Grade II materials. Repetitive, after-school remedial methods for these children are deemed unnecessary. Grades, promotion marks, and formalized goals receive less emphasis than formerly, and marks are more often expressed in qualitative than in quantitative terms.

The grouping of children according to their social maturity and interests, the utilization of self-teaching and self-testing devices, and the coordination of reading skills with other

¹ This is not a plea for "accidental" or unplanned learning. This point of view requires much more planning and organization than the typical classroom situation.

² WRIGHTSTONE, WAYNE J. "Achievement in Conventional and Progressive Schools." *Progressive Education*, XIII: 389-95. May, 1936.

subject-matter areas have much to give to the teaching of reading. When these are combined with the broad field, large bloc type of program previously described, the child has time to learn to assume some of the responsibility for his progress, for appraising his efforts, and for further planning his own growth. The atmosphere of such a classroom with its opportunity for freedom, mobility, self-expression, creative activity, and flexibility is not ill-adapted to the "when-needed" learning of reading skills.

SUGGESTED REFERENCES

1. BOND, GUY L., and BOND, EVA. *Teaching the Child to Read*. New York: The Macmillan Company, 1943.
2. BROOM, MYBERT E., DUNCAN, MARY ALICE ALLEN, EMIG, DOROTHY, and STEUBER, JOSEPHINE. *Effective Reading Instruction in the Elementary School*. New York: McGraw-Hill Company, 1943.
3. DEPUTY, E. C. *Predicting First-Grade Reading Achievement* (Teachers College Contributions to Education, No. 426). New York: Teachers College, 1930.
4. DURRELL, DONALD D. *Improvement of Basic Reading Abilities*. Yonkers-on-Hudson, N. Y.: World Book Company, 1944.
5. FREEMAN, FRANK S. *Individual Differences*. New York: Henry Holt and Company, 1934.
6. GATES, A. I. *Psychology for Students of Education*. New York: The Macmillan Company, 1925.
7. ——— *The Improvement of Reading*. New York: The Macmillan Company, 1939.
8. ——— *New Methods in Primary Reading*. New York: Bureau of Publications, Teachers College, Columbia University, 1928.
9. GRAY, W. S. *Summary of Investigations Relating to Reading* (Supplementary Educational Monographs, No. 28). Chicago: Department of Education, University of Chicago, 1925.
10. HARRIS, ALBERT J. *How to Increase Reading Ability*. New York: Longmans, Green and Company, 1941.
11. HARRISON, M. LUCILE. *Reading Readiness*. Boston: Houghton Mifflin Company, 1939.
12. HILDRETH, GERTRUDE. *Learning the Three R's*. Minneapolis, Minn.: Educational Publishers, Inc., 1936.
13. REED, H. B. *Psychology of Elementary School Subjects*. Boston: Ginn and Company, 1927.

14. STONE, CLARENCE R. *Better Primary Reading*. St. Louis, Mo.: Webster Publishing Company, 1936.
15. ——— *Better Advanced Reading*. St. Louis, Mo.: Webster Publishing Company, 1937.
16. WITTY, PAUL, and KOPEL, DAVID. *Reading and the Educative Process*. Boston: Ginn and Company, 1939.
17. *Thirty-Sixth Year Book of the National Society for the Study of Education*. Part I: "The Teaching of Reading: A Second Report." Bloomington, Ill.: Public School Publishing Company, 1937.

The Skill Subjects: Language Arts

I. THE PROBLEM OF LANGUAGE ARTS INSTRUCTION

IN SPITE of the fact that there is much reason for current criticism of children's ability to speak, write, and spell correctly, there is also valid evidence that the great mass of boys and girls in our schools are learning more science, grammar, spelling, and arithmetic than did the more highly selected group fifty or seventy-five years ago. Nevertheless there is room for criticism. Data from the colleges and the armed forces present disturbing pictures. High school graduates are unable to express themselves clearly, and many of them are ignorant of the background and structure of their own language. Such results cannot be attributed to a single cause. Nor can responsibility be fixed by the fact that the colleges say the high schools are at fault and the high schools pass the blame on to the elementary schools.

There are two leads to follow in tracing the cause of the situation. In the first place, much of the teaching in language, grammar, English, spelling, or however the material is catalogued, is actually producing habits and attitudes that make it impossible for children to participate adequately in discussion and to write reports, keep records, and write formal and informal letters. This result is evident, generally, when instruction is piecemeal and teachers become interested only in their own specialty. Those outside the language arts fail to accept any responsibility in the matter, so that the need for practice and application is lost sight of. Furthermore, the definitely scheduled classes in language arts divisions must wage hopeless competition with the total environment of the child. The language of home, of the street, of the playground, has a greater opportunity to ingrain itself



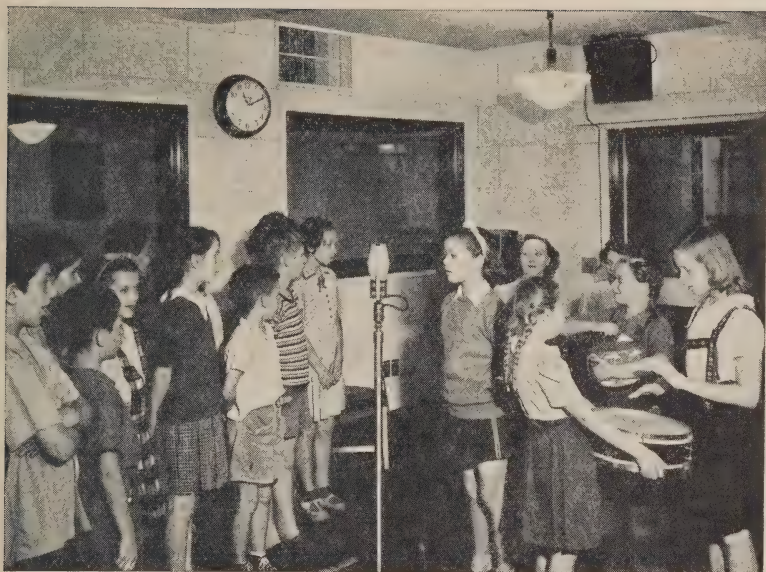
Producing a room newspaper provides experiences in the language arts.
(Courtesy of the Saginaw, Michigan, Public Schools)

into the pattern of the child's expression than does that of a twenty-five, thirty, or even forty minute period isolated from other classes and from the child's environment.

The second lead to the source of the difficulty can be found in the utter confusion on the part of those trying to correct it. Courses of study are not clear in their objectives nor as to means for achieving objectives. Grade placement of materials is debated, and lack of uniformity among courses of study is the rule rather than the exception.

II. OBJECTIVES IN THE LANGUAGE ARTS

In approaching the problem let us look into the objectives of language arts teaching. The common function of writing, speech, spelling, and composition is to render effective communication with others. Spelling learned without meaning has little value, since the child will not know how to connect it with his oral or written vocabulary. Penmanship without effective expression is only an ornament. What is needed from



An actual radio broadcast as a culminating activity to a unit does much to stimulate children's language interests and skills; this scene is from the Campus Demonstration School of Michigan State College.

all the language arts, written or oral, is accurate, well-stated, enjoyable communication from one person to others. The child conveys his attitudes, feelings, and ideas by oral and written expression. By means of the language arts he receives impressions from others, what they think, what they feel, and what they mean. And further, the thinking done by the child himself before he actually expresses his thoughts, his questioning of views, his shaping of ideas, his solving of problems, are all carried out in language symbols.

To help the child develop these skills, it becomes the responsibility of the school to provide instruction and experiences in the area referred to as the language arts. Reading rightfully belongs to this area of instruction, but since it has already been treated separately and since it underlies all instruction, including the language arts, it will not enter further into our discussion. The language arts, then, can be thought of as oral or written expression. Oral expression

includes those subjects recognized as speech, composition, and grammar. Written expression includes spelling, grammar, handwriting, and composition. Grammar and composition are at home in either classification. All phases of oral and written expression must be taught so that adequate skills may be developed for conveying ideas. Penmanship, spelling, and grammar are merely the contributing tools. It is only in school that they are regarded as ends in themselves and isolated entities. When they are taught separately and apart from one another, their purpose is lost sight of and they become ends in themselves.

Fortunately, there is an increasingly large group that sees the over-all objective for the language arts. Although there are those who advocate isolated specific teaching in each of the phases, there are leaders who agree with the authors' views on the subject. Blaisdell states that "grammar has little if any value in developing the power of easy effective self-expression."¹ He points out that with the exception of giving some time to the place of the subject and the predicate, very little formal or technical grammar can profitably be introduced before the child reaches the seventh grade. He goes even further in his indictment of the formalized approach when he says that only that grammar which is practical and helpful in assisting the child to improve accuracy of expression has any place in the public school program. Seeley takes a similar position in his statement that grammar should approximate a completely utilitarian or remedial approach.² Any formal teaching in the elementary grades should be motivated by needs reflected in children's usage rather than by any dictatorial, pedantic decision.

III. GENERAL ORGANIZATION

Organization of the language activities of a school of course takes its cue from the philosophy and purpose of organization of the total program. Time policies, which determine whether the language arts are to be taught as separate subjects or as

¹ BLAISDELL, T. C. *Ways to Teach English*. New York: Doubleday, Doran and Company, 1930, pp. 202-235.

² SEELEY, H. T. *On Teaching English*. New York: American Book Company, 1933, p. 20.

integrated skills related to the needs of children as indicated by their level of maturation, are major factors in guiding the development of the program.

Where organization is looked upon as a means for efficiently bringing about the total development of the child, separate class scheduling of the various subjects is minimized. Breaking away from definite class schedules, however, can cause much confusion. While many teachers are convinced of the necessity of relating language arts activities to the needs of the child, they are slow to make the move, because they are unable to visualize the necessary organization and framework. In the case of schools that have made the break, it is difficult to determine whether language arts teaching represents a refined kind of extra-curricular activity carried on by inspiration and "insight" or whether it represents a revamped definite period in which certain skills are to be acquired less painfully than before.

It is the view of the writers that there may be a compromise between the two. One illustration of this compromise is the Alabama program for elementary schools.¹ In this program, language arts is combined with reading, and one full hour is given to the area. Reading is not learning to read but includes, as well, reading to learn. Thus discussions and reports are forthcoming, records are made, charts are posted, and creative writing is encouraged as it develops from the experiences of the children. Plays are planned and rehearsed. Perhaps they are presented to an adjoining room, or an assembly, or merely for themselves. In this part of the program formal drill and remedial work are barred. A later period is set aside for all sorts of "skills and drills," when children are given attention as they need it and on what they need.

Another, similar type of organization but one differing a little from the previous example is the Alabama sixth-grade outline.² Here a work period in the social skills opens the school day. This period is long, one and a half hours, and is followed by a forty-five minute period devoted specifically to the language arts. Here, attention may be called to

¹ See above, pp. 71-73.

² See above, pp. 68-70.

common grammatical errors that have cropped up, or a review of words misspelled or mispronounced may be held. Reports prepared for the unit activity may be written here and discussed and corrected with others, or a group may write a play or plan a dramatization. Formalized drill becomes a part of another period devoted to checking, reviewing, and testing on all skill requirements.

There are many other types of program which are satisfactory. It seems that a period attached to or part of an over-all unit is the most popular way of motivating language arts activity. According to the *Forty-Third Year Book*, dealing with the teaching of the language arts:¹

The available evidence leads members of the Committee responsible for producing this yearbook to believe that in general, the most effective organization of instruction in the elementary grades involves an integration of the language arts with all the other vital activities and interests of pupils.

IV. THE PROBLEM OF CONTENT

One of the reasons for the present confusion regarding content lies in the approach to the problem. Curriculum makers have been persistent in working out content on a subject-matter basis rather than on a basis of needs, skills, and appropriate language competencies. When the problem is seen from this latter standpoint, the child is taken as he is and taught what he needs without particular reference to sequential coverage in several subject-matter fields within the language arts area. The approach from the point of view of competency without regard to subject-matter divisions, eliminates overlapping and makes possible a balance and an integration of subject matter based upon the needs of the child. This is neither "wild-eyed" nor radical, and certainly is in harmony with the psychology of growth and development.

From this point of view, McKee has listed ten important activities which should be taught in the language arts programs:²

¹ DAWSON, MILDRED, and others. "Teaching Language in the Elementary School." In *Forty-Third Year Book of the National Society for the Study of Education*. Bloomington, Ill.: Public School Publishing Company, 1944, Part II, p. 117.

² *Ibid.*, p. 12.

1. *Taking part in conversation and discussion*, including (a) informal conversation in which there is no problem to be solved or decision to be reached, (b) discussion of a definite topic or question in which a problem is to be solved or a decision to be reached, (c) interviews, (d) the making of introductions.

2. *Using the telephone*, including (a) answering various types of calls, (b) making various types of calls, (c) talking and listening on the telephone.

3. *Taking part in meetings*, including (a) acting as chairman, taking part as a member of the group in a meeting of a club, class, or other organization, and writing the minutes of a meeting, (b) acting as a chairman, a performer, or a member of the audience in a school assembly.

4. *Giving reports*, oral and written, including (a) the report of a personal experience or an experience of another person, (b) the so-called special topic report, (c) different types of talks and speeches.

5. *Telling and writing stories*, including (a) the joke or anecdote, (b) the story previously heard or read, (c) the story made of a personal experience or an experience of another person, (d) the imaginary story.

6. *Giving directions and explanations*, oral and written, including particularly (a) directions for getting to a certain place or for making something, (b) explanations of how something was done or made.

7. *Giving reviews*, oral and written, including reviews of books read, radio programs heard, and movies seen.

8. *Making announcements and notices*, oral and written, including (a) the oral announcement of a meeting to be held, or a party, exhibit, or program to be given, (b) written notices covering the same types of events.

9. *Giving descriptions*, oral and written, including particularly the description of an object or a person to be identified by others.

10. *Writing letters*, including (a) friendly letters such as the informal note, the news letter, the letter of sympathy, the thank-you letter, the congratulatory letter, invitations, and replies, (b) business letters such as orders, requests for information or sample goods, applications.

The reader may well ask, When are these activities to be taught? What is the sequential relation of one activity to

another? What grade placement should be made? It is difficult to break away from the old grade placement teaching of language arts skills. It ensures coverage and provides an opportunity to plan in advance and then develop ways and means to carry out such plans.

The word "need" is the criterion used by most modern writers to provide cues for the selection and sequence of content. The word "need" is vague, however, and lacks meaning for the teacher making the shift for the first time. Perhaps it will be helpful to substitute "maturity" for "need." Maturity is the result of the interaction of the individual to his environment. The result can be pictured. It can be roughly represented by a line of growth with a slow beginning in grades one and two, a rapid rise through grades three and four and five, and a levelling off in grade six. In the main the activities listed by McKee can be interpreted as needful activities at the stages of maturity shown in Figure 19. It must be remembered, however, that the curve shown is not representative of all boys and girls and only roughly approximates average development. The following points should be kept in mind and may prove helpful in building a content of study related to the needs of the child.

1. *Variability of growth requires variability in grade placement.* The maturity of children within each grade will vary. Instruction should therefore provide sufficient differentiation to meet individual differences. This can be done through the supplemental period, where each child should be treated according to his needs.

2. *Emphasis in content depends upon maturity.* Emphasis in the language arts can be outlined in terms of the periods of development shown in Figure 19.

In Period One, in which the child normally is beginning to emerge from his babyhood cycle, emphasis should be placed on speech activities. This is the time when children should be watched for speech defects, careless and faulty speech habits, and inhibition through reluctance to participate in informal discussion. Skill learning is entirely out of place here.

In Period Two, the period of rapid learning, nearly all activities not previously introduced should be started. This is the period which sees the introduction of more skills than

Period Three is generally a period in which there is a "levelling off" of growth and maturity. Mastery of skill

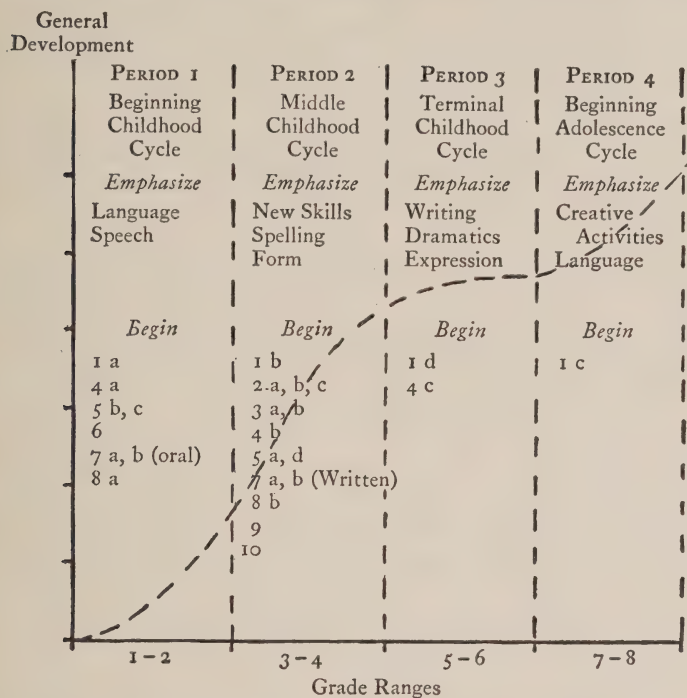


FIGURE 19. Suggested Emphasis and Content in Basic Language Arts Activities in Relation to the Maturity and Development of the Child

should not be pressed so much as applications of skills already learned. Composition, dramatics, play-writing in connection with puppetry for example, reports, and functional applications are possible applications. In a sense it is a polishing-up period. Boys and girls are still quite compatible in their interests, and the closest tie-up of language arts activities with unit work should be carried out.

Period Four is a period which many boys will not reach even in junior high school. Nearly all girls, however, pass through it before they finish the seventh and eighth grades.

Imaginative composition, creative writing, and dramatics should be emphasized. Skills may be stressed, if possible in a functional way. Growth may rise to new maxima. Quality, form, and good taste may be emphasized. This is the period in which there must be differentiation between the language arts activities of boys and of girls. In schools where size makes sectioning possible, boys and girls should be separated part of the time. The activities of girls will follow the pattern described. The activities of most boys must be continued as in Period Three, a functional application of skill knowledge. Language activities for boys will be most successful when carried out in connection with unit work.

3. *The chain-gang concept of mastery is impossible.* It must be kept in mind that the old idea of mastering one skill before beginning another is a rationalization. It sounds well and is most convincing propaganda when delivered as an ultimatum to children and parents alike. But it is false, and contrary to our knowledge of how children grow and develop. Skills may be introduced at different times, but the maturing of all skills introduced in school comes about the same time (see Figure 20). In other words, there is a paralleling of growth, all skills following a similar pattern to a plateau preceding adolescence, and then rising abruptly and arriving at another maximum in late adolescence. Instruction, therefore, must take into consideration the fact that many phases of growth are taking place at the same time.

It should be kept in mind that greatest success in teaching will occur where maximum enriching experiences are provided. No other factor is nearly so important as providing the best experiential environment.

V. PERSISTING PROBLEMS

GRAMMAR AND COMPOSITION. Although teaching in this area should be related to broad unit activity and content, and sequence should be developed according to the maturity of the child, there is still need for calling attention to what errors should be looked for. It will be accepted without argument that in both oral and written composition, approximately half of the errors, other than those of punctuation,

are found in verb forms. The remaining errors are for the most part in syntactical redundancy, double negatives, and

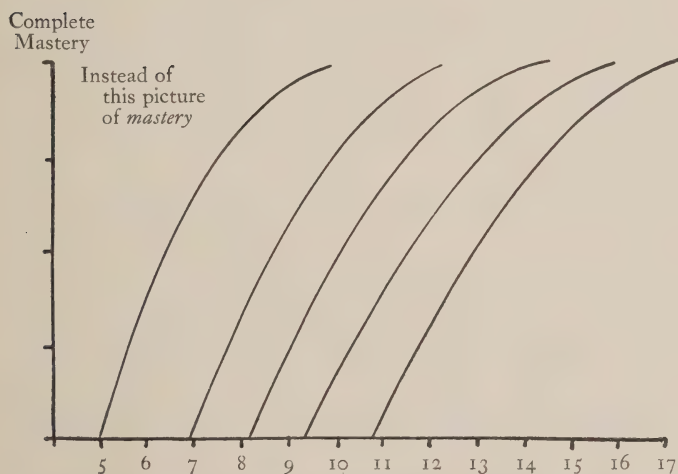
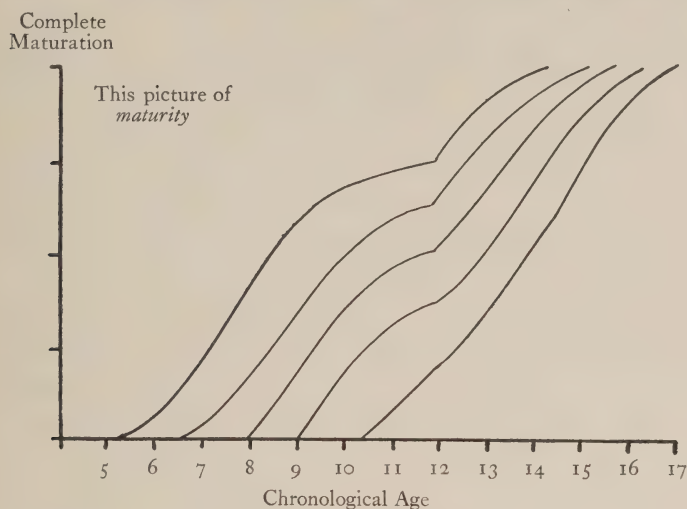


FIGURE 20. Concept of Growth as Contrasted with Concept of Mastery

pronouns. Such a small list would indicate that we need to concentrate on relatively few errors in language work. Since the vitally serious number only about ten, there is still stronger argument for giving more time to expression than

contributes to clearer, better organized, more adequate, and more interesting communication.

The criterion for selection in the field of grammar is "functional" use. When one says "functional," though, he has eliminated many of the formal activities that are still loved by some teachers. Diagramming, for example, perhaps an interesting skill but useful only in helping the child to see looseness and inconsistency in his own writing, must generally be eliminated. As an isolated activity connected with a real situation, it can be nothing but dead wood which clutters the child's mind with useless if not confusing material. In the same way, an organized grade placement presentation of definitions of the parts of speech cannot be defended. Is it really important, for instance, that a child know what nouns are so long as he uses them correctly? Learning definitions will not in itself produce facility in use. The important thing is that the child come to recognize that sentences should have a subject and that certain kinds of words can properly serve as subjects. If learning a definition in connection with a felt need will aid in use, then by all means it should be memorized. In most cases, though, it has been found that the child will learn correct use of the various parts of speech by actually writing and speaking under guidance without any emphasis on definitions.

Even the functionalist will admit the fundamental importance of correct punctuation, because meanings often depend on the use of a comma, semicolon, or dash. Apostrophes, colons, and exclamation marks are relatively unimportant, particularly in their use by elementary school children. Capitalization, as marking the beginning of a sentence, is fundamental to the reader's understanding just as is the period at the end of a sentence. Other uses of capitalization, except for proper names, are not too important in the earlier stages of composition. The whole present trend in composition is toward simplicity consistent with clear reader understanding.

Although many reputable authors do use incomplete sentences, they do not use them indiscriminately. It is probably wise, then, to emphasize completeness of sentence structure in the composition work of children. If, later on,

they become skillful enough to use incomplete sentences as they become more expressive, then such use may be taught.

Many other hints, of course, are pertinent; some of the most outstanding are the following:

- (1) Tell thoughts in order
- (2) Keep to the point
- (3) Use well-chosen words
- (4) Use good opening and closing words
- (5) Begin sentences in different ways
- (6) Use a good title

The following activities or skills should be developed as children mature:

- (1) Writing letters
- (2) Dramatizing
- (3) Using telephone
- (4) Writing labels, notices, announcements
- (5) Copying correctly
- (6) Writing accurately from dictation
- (7) Using correct spelling
- (8) Correct use of capitals in quotations, proper names, titles, and beginning of sentences
- (9) Correct use of period after an abbreviation and at the end of a sentence
- (10) Correct use of comma between city and state and in separating a direct quotation from the rest of the sentence
- (11) Correct use of quotation marks
- (12) Correct use of apostrophe in possessives and in contractions
- (13) Correct organizing of paragraphs

Certain refinements and additions will be found in textbooks, but in the main this list represents the really essential things that elementary children need to acquire. Various texts will indicate grade placement but in the main they should be considered suggestive rather than mandatory.

If language arts can be divided between two periods as in several of the programs discussed in an earlier chapter, then it

may be said that, for most of the work, grouping is unnecessary. For drill, or remedial, or special attention work, individualization is absolutely necessary and at the same time eliminates the need of groups. If language arts is to become a part of an over-all unit, with a special time for individualized study and help and planned according to one's needs or deficiencies, motivation is ideal and the teaching of the skills becomes functionalized as well as individualized. Workbooks have very little part to play unless they are arranged on a diagnostic basis according to the differing needs of the children.

Drill has a very definite part in many phases of the language arts. It is best when highly motivated; and, other things being favorable, the type of organization suggested here seems to facilitate the best kind of motivation.

It should be entirely functional, and consequently there is very little opportunity, or need, for group drill. Since the children in the group learn at different rates and are at different stages of maturity, group drill is highly inefficient and wasteful of time.

Drill should be used sparingly in connection with an established principle after satisfactory understanding has been reached. Supplementary materials, which may be used for follow-up work after drill and checking, should be as abundant as possible. For example, the teacher needs language texts and workbooks designed for several grades above and below the one being taught, material which will be fairly workable for the backward child along with some which will present a challenge to the more precocious boy or girl. Such diversification is advisable from the standpoint of variety of reading skills alone. Surely the fifth-grade child who reads on a third-grade level would have difficulty in getting the meaning from a fifth-grade language book. Partial sets, as well as some single copies, are preferable to books of one kind for the whole class. Individualization requires only a few books of the same degree of difficulty and of subject-matter coverage.

SPELLING. Investigations have confirmed what teachers and parents have known for a long time — that some children have what appears to be a natural knack for spell-



Such activities as pet shows may furnish motivation for language arts.
(Courtesy of the East Grand Rapids, Michigan, Public Schools)

ing.¹ Even in the same family, many mothers can testify to the fact that while one child can spell correctly without much effort, another child finds it a very laborious process.

Spelling shows but little correlation with native intelligence. Once in a while children are found who do poor work in everything else but are able to spell quite well. Why? No one knows, and only doubtful hypotheses have been advanced as explanations. Some observers hold that spelling is a mechanical process requiring no particular native aptitude except, possibly, manual dexterity. Others have found that since it

¹ For kinds of spelling knowledge see DOLCH, EDWARD W. *Better Spelling*. Champaign, Ill.: The Garrard Press, 1942.

consists in placing letters in the proper sequence, only a peculiar kind of mental ability may be responsible for remembering order and arrangement.

Strangely enough, the good reader is not necessarily the accurate speller. Perhaps we should expect such a result in view of the fact that word recognition in reading takes account of the general appearance and configuration of the word without an analysis of the letter arrangement. Perhaps alphabetic reading methods of an earlier day did a lot more for spelling than do modern methods.

Little if any relationship can be found, either, between spelling and composition. A child may be able to write expressively, accurately, and correctly, but still misspell rather extensively.

In the development of competence in spelling, it is of the utmost importance that the child be made to realize that it will mean a lot to his success as a student and in any professional venture of later life. It might be said rather broadly that teachers generally can overlook almost any grammatical incorrectness so long as spelling is satisfactory. Employers of stenographers, teachers, clerks complain more about spelling than about any other incompetence. In composition we may have gone over to the stylistic outlook which accepts almost any grammatical deviation as long as the language is clear and expressive; but in the case of spelling we are as yet unprepared to accept anything except absolute accuracy, regardless of understanding of meanings. Nothing more quickly brands a person as uncultured or even uneducated than mistakes in spelling. Inaccuracy in this tool is not condoned by anyone.

A study of errors in spelling is of value both for diagnostic and for remedial purposes. According to Reed,¹ most errors are due to lapses, imperfect vision, imperfect hearing, and false associations.

Book and Harter,² who studied the errors of grade children, high school pupils, and college freshmen, discovered that all

¹ REED, H. B. *Psychology of Elementary School Subjects*. Boston: Ginn and Company, 1927, pp. 224-272.

² BOOK, W. F., and HARTER, R. S. "Mistakes Which Pupils Make in Spelling." *Journal of Educational Research*. XIX: 106-118. October, 1925.

errors could be grouped under eighteen types which were synonymous with the psychological factors producing them. The causes of error were:

1. Mistakes of Expression

a. Omission	20.5%
b. Anticipation	3.2%
c. Repeating or adding	7.3%
d. Transposition	6.3%
e. Carelessness	6.4%
f. Doubling wrong letter . . . . .	.3%
g. Interferences	1.4%
h. Forgetting word	1.6%
i. Substitution	3.1%

2. Words Not Learned

a. Phonetic spelling	26.0%
b. Mispronunciation	1.1%
c. Alternatives	1.1%
d. Doubling	3.2%
e. Non-doubling	3.4%
f. Substitution of similar letters and syllables . . . . .	.7%
g. Homonyms	2.1%
h. Ignorance of word	7.0%
i. Failure to hear or perceive words correctly	4.4%

Davis ¹ lists under different categories the following errors for children in grades three to six:

Error	Frequency
1. Has not mastered the necessary steps in learning to spell a word	88
2. Writes poorly	88
3. Cannot pronounce the word	78
4. Lack of application and interest	71
5. Lack of association between sound of letters and syllables and spelling of word	49
6. Needs more time for learning	21
7. Discouraged by pre-tests	20

¹ DAVIS, G. "Remedial Work in Spelling." *Elementary School Journal*. XXVII: 615-626. March, 1927.

Mendenhall¹ found that 85 per cent of the most frequent errors are in omission and substitution of letters, 75 per cent are phonetic, and 4.5 per cent are homonyms. He also reports that the addition of each succeeding letter or word makes the task increasingly difficult.

Recent experimentation would indicate that spelling can be taught about as well throughout the school program as it can in a special period. Consequently, where language arts represents a combination of all forms of written and spoken communication, spelling becomes a part of the combination. A good school program minimizes the need for a special spelling period. This does not mean necessarily that time should not be provided for helping individual children attack new words and to learn to spell words that they have misspelled or mispronounced in written or oral composition. And when should this time be provided? In the period set aside for individual work on skill and drill work, as described earlier in connection with language. The Alabama programs provide suitable illustrations.

The conventional spelling period is probably one of the most inefficient and wasteful of all formal drill periods. Almost every teacher knows that when a new list of words is presented to any grade group, the children can already spell from 10 to 80 per cent of them without any work. The assumption that the child will study only the words he has missed is not satisfactory, since it does not dispose of the time properly. All the children have the same amount of time but the more inept need to learn most words. An orderly procedure would be the reverse; the child with most words to learn should have the greatest amount of time.

While most teachers feel the need for the special lists of words found in textbooks or workbooks, it would be more efficient to provide each child with some type of workbook wherein he could record his own. Words would be taken from his compositions and from his mispronunciations in reading and in language. The vocabulary children need to learn to spell is the vocabulary of their written and oral compositions. Textbook lists tend to teach them many words they do not

¹ MENDENHALL, J. E. *An Analysis of Spelling Errors*. New York: The Lincoln School of Teachers College, Columbia University, 1930, p. 65

use or have not yet made a part of their natural vocabulary. The authors' recommendation assumes that development comes from the speech of the child and from his natural experiences rather than from superimposed vocabularies.

The time will come when educational science will be able to predict from a child's reading maturity the proper time for him to be introduced to spelling. For some this will happen in the first grade, for others it will be delayed until the third grade. The point is that spelling should not be introduced until the child is actually making progress in beginning reading. When he is reading haltingly or with great effort, spelling should be deferred.

For the majority of children it does not make a great deal of difference what method of teaching is used. Most of them need only a short exposure to the word and several checkings on it over a period of a few weeks; then if it is a part of that child's vocabulary, his mastery is rapid. In order to individualize and to make the most of the allotted time in the "skills" period, directions for studying words will be necessary. Under conditions where there is a periodic check of growing spelling ability by the use of standardized spelling scales, the short teacher tests are almost entirely unnecessary and group activity can, in many instances, be replaced by having children "pair off" and check words with each other. For most children spelling is just about as simple as this.

For children who have difficulty, more organization and teacher time is necessary. With such groups the modern spelling plans can be used. Among these the authors find little preference. One of the best is the supplemental dictionary. Children at all ages and all levels of achievement should be urged to consult the dictionary whenever they are not sure of a spelling, no matter what may be the occasion for using the word. There is no substitute for the standard dictionaries for elementary school children, which provide means for learning words not in their spelling books but frequently used.

HANDWRITING. Before the turn of the century beautiful, ornamental penmanship was stressed both in society and in the home. During this period and for centuries earlier when court orders, marriage certificates, business letters, and records of all kinds had to be kept in longhand, neat if not

ornate writing was a distinct asset. Penmanship naturally became a major subject in schools. Woe to the teacher who herself could not write well or who was unsuccessful in training her pupils in this subject!

The typewriter has today doomed this sort of penmanship. Longhand is still widely used, of course, but most adults confine it to letters to friends and to notes and records to be read by the writer himself. The need for curlicues and embellishments has passed since speed has become so much more important to one who has friendly letters to compose, notes to take, or records to keep.

In order to gain speed and accuracy the early decades of the century produced "systems" or methods which tended to develop standardization with the greatest possible efficiency. Individuals, however, failed as usual to be standardized, and as a result individuality cropped out in handwriting. Most authorities today feel that a distinctive style may well be cultivated, whereas this practice would have been frowned on in earlier times. Penmanship is more and more taken as an indication of personality. Probably the trend toward individuality is one that teachers should permit and even encourage as long as efficiency and legibility are preserved.

What has been said regarding individuality applies to handwriting on the automatic response level rather than at the early period when it is nothing more than a technique of "drawing." Consequently there is justification here for making a brief analysis of what happens as the child is learning to write.

Unlike most of the other school subjects handwriting requires participation of the total neuro-muscular structure. Spelling and arithmetic require a minimum of muscular application and a maximum of mental, while reading to a great extent exercises eye movements together with mental associations.

Beginning to write, on the part of the young child, brings into play the musculature of much of his whole skeletal organization. It is not unusual to see a young child attempt his handwriting lesson with tongue in cheek or projecting out of his mouth, along with a tensing of arm and leg muscles as

well. As the response becomes automatic, less musculature cooperation is demanded.

By the time the average child gets through the third grade, large muscle involvement lessens and the accessory muscles take over. Until this stage is reached, children need large writing surfaces to allow for expansive, billowing, and uncramped writing. The need of the child at this stage is not for preciseness or accuracy or adaptation to a system but rather for a coordination and smoothing of the muscle effort involved. Conformity should be required at this time in only a broad sense, and the details of any one system should be ignored. Thus tension and fatigue in the muscles leading to emotional irritability can be avoided and naturalness and individuality can be encouraged.

Many teachers and many systems require rhythmic arm motions on the part of the performer. The best way to encourage such a coordination is to refrain from unnatural forcing of small writing with small pencils or pens. The child needs plenty of freedom and space. In many cases the black-board or large sheets of wrapping paper are preferable to "writing" paper or copy books.

The recognition of variability in handwriting and the decision of recent authorities to preserve individuality and sacrifice conformity, have caused teachers to toss aside many of the old traditions. From the point of view of many trained in the old school, abandonment of the "arm movement" is hardest to accept. And yet there is much evidence that the decision is well founded. On this subject Saucier says:¹

The large majority of people do not learn or need the arm movement. . . . Hence the elementary teacher in using the arm movement makes himself conspicuous. Moreover, the immature beginning pupil is not ready for training in arm movement.

No less an authority than Freeman takes the same stand when he states:²

¹ SAUCIER, W. A. *Theory and Practice in the Elementary School*. New York: The Macmillan Company, 1941, p. 270.

² FREEMAN, FRANK N. "Child Development and the Curriculum." In *Thirty-Eighth Year Book of the National Society for the Study of Education*. Bloomington, Ill.: Public School Publishing Company, 1939, Chap. XIII, p. 258.

Arm movement is difficult to acquire, is unsuitable for young children, and, if it is taught at all, should not be emphasized until the pupil has acquired a fair degree of motor skill, probably in the intermediate grades.

Another tradition that has been abandoned is the use of norms for speed and quality. Differences originate in the neuro-muscular mechanism of the child and do not respond freely to the standardization implied in the use of norms. Nevertheless the use of norms does have some value. At best they should be made available to children to enable them to determine and evaluate growth and improvement rather than as a gauge for teacher-imposed pressures toward standardization.

Manuscript writing was brought here from England in the 1920's. The first schools interested were the private schools and the progressive public schools. Much experimentation has dealt with its values, most of it in favor. Even the commercial publishers of handwriting materials have accepted it and have developed techniques for its teaching.

When it was first projected in this country, many teachers, impressed by its opportunities, became skeptical of its possibilities in developing speed. The investigators went to work. Strangely enough they found that at the early grade levels pupils using this method exclusively were superior to children using the cursive method. At the upper elementary or junior high school levels there was less agreement concerning the development of speed and quality of performance. Freeman concluded:¹

It may be accepted as a fairly well established fact, . . . that manuscript writing is faster in the writing of younger children and that cursive writing is faster in the writing of older children and adults.

Washburne and Morphett, on the other hand, state:²

The data . . . indicate that, once the children have learned manuscript and have used it consistently through their school

¹ FREEMAN, FRANK N. "An Evaluation of Manuscript Writing." *Elementary School Journal*. XXXVI: 450-451. Feb., 1936.

² WASHBURNE, C., and MORPHETT, M. V. "Manuscript Writing — Some Recent Investigations." *Elementary School Journal*. XXXVII: 521. March, 1937.

work, it tends to be slightly faster than cursive, certainly not slower.

There are other problems than speed on which there is no clear evidence favoring one method or the other. Many of these can be seen in the advantages claimed by the proponents of each system. In order to facilitate comparison, they are listed in parallel columns below.

ADVANTAGES CLAIMED

MANUSCRIPT

CURSIVE

1. Consists of straight lines and curves without connecting links which require skillful manipulation. Easier to learn and can be read even when the child has but little muscular control.

2. Since it is more like the print the child reads, it is less confusing for him to learn.

3. Since most people learn to print at some time or other, it might as well be learned when it is natural and an aid in reading.

4. Some children find cursive difficult and can become more successful with manuscript writing.

1. Develops more speed at upper-grade levels. Pupils who learn manuscript usually change to cursive as they get into upper-grade levels. Therefore children should learn cursive in the beginning.

2. Smoother, more flowing and uninterrupted strokes, when antique flourishes and curlicues are eliminated.

3. Children who are never introduced to cursive feel handicapped and immature, since so many other children use the cursive method.

4. Lends itself better to children who have difficulty in developing aesthetic or artistic manuscript.

The authors have no preference. It is interesting to note, however, that the problem of teaching both at the same time is one that is as yet untouched. From the purely aesthetic point of view, manuscript has possibilities far beyond cursive. Handwriting in the true manuscript is an art and should be encouraged as such. The authors would agree that

where manuscript is the method first employed, a transition should take place in either the third or the fourth grade. Children at this stage should probably be introduced to cursive and should have sufficient practice so that it will remain no mystery for them. From this point on, the child should be allowed and encouraged to develop the method that is most appealing to him.

Since growth in handwriting is so closely related to the developing maturity of the child, the authors believe it would be helpful to point out desirable practices in relation to the growth phases of the child.

For most children the initial stage begins with the writing activities of the first grade and continues into the third grade. Children vary so much in their maturation that the period is difficult to define. For most, it may be said to cover all the first-grade work and part of the second. Children may be encouraged to develop any natural inclination for writing. All children should, as soon as possible, be given instruction in writing their names. Letter form and movement should be demonstrated in manuscript. The blackboard, a piece of wrapping paper, or large-sized drawing paper may be used.

As children learn letter forms, they may do a little writing in making their scrap books, Christmas cards, and valentines. Labelling of course should be encouraged. As the child gains minimum control, he can be encouraged to reduce somewhat the size of his writing. Some time can be given to practice on letters of the alphabet.

All writing at this stage must represent copying in order to avoid incompetencies in spelling. Children may wish to make their own copies of stories dictated to the teacher and written by her. As troublesome letters appear, they should be isolated for some study; but the whole planning should be casual. Naturalness in position and some uniformity in spacing and size can be developed. No formal or daily classes are necessary.

The second stage of development corresponds to the beginning of rapid improvement in reading, spelling, and writing. Most of the fundamental movements, letter making, and phrase and sentence forming mechanics, have been partially developed. As in reading, this stage may be thought of as that

period in which writing begins to be a tool rather widely used in school. Some individuality will manifest itself and should be encouraged along with attention to quality, workmanship, and beauty. All these are what constitutes readability.

Basic writing materials may now be employed if teachers are at a loss for instructional materials. For competent teachers they are not so necessary. Since this is a period previous to very rapid growth, the use of speed and quality tests is practical in order to obtain status measures for appraising the growth which is to follow. Only the most competent teachers can get along without regular handwriting classes at this stage.

Fourth- and fifth-grade children will generally be found in the stage of rapid progress. An increase in writing opportunity can be made. Children should be encouraged to keep records. The need for special class instruction begins to diminish. Children who require mechanical or technical help with problems of formation or slant can be handled in the "skill and drill period," a period devoted to the individual needs of the child as reflected in his general over-all activity.

Rapidity in writing can be encouraged, but speed should not be emphasized at the expense of quality. Children who are changing to cursive will probably need continuing help during this stage.

For purposes of general identification, the fourth stage—that of broad utilization of handwriting skills—may be thought of as a pre-adolescent period of the fifth and sixth grades. At this stage there is need for the use of handwriting in many subject-matter fields. Making notes of trips, books read, things to be done, should demand the best work of the child along with naturalness and ease in doing it. Writing activity should be called upon in relation to purposes in connection with content subjects or with projects which combine these subject-matter fields.

There is but little justification for formal writing activity at this stage. Such of it as is assigned is apt to be boring and without effect. Writing becomes a skill to be used and as such it must be handled.

There is a danger point here, of course. Because of the general use of writing, standards of legibility and beauty are

apt to be abandoned by both teacher and pupil. The use of self-rating tests may be provided so that the child can occasionally inventory his habits. When comparisons with such scales are made, they should utilize "every day" papers, not something written especially for the occasion.

The time beginning with the sixth grade and running through junior high school can be called the grade equivalents for the final stage of development, that of complete maturity. It is a period in which complete control will be gained along with wide application of the skill.

The time devoted to handwriting should be given over to instruction as the child sees the need for it. Speed as well as quality should be expected, and the use of tests should be encouraged as checks.

During this period improvement can be expected since it is the time for adolescent development and represents growth toward full maturity.

VI. IN CONCLUSION

The language arts are a dynamic, vital area of human experience. Communication was one of the tools by which man lifted himself from the lower animals, and it is one of the means by which he retains his dominance.

There can be no defense for any teaching of language arts which does not contribute directly to better communication. Grammar, spelling, penmanship, and composition which do not assist the child to express himself more clearly, forcibly, and intelligibly cannot logically be defended.

Functional expression in connection with actual experiences best teaches the use of language as a tool. In life one expresses himself as he has needs and desires. This should be the goal of language teaching in school.

Language teaching should not, however, be entirely opportunistic, although some of it can be. Definite goals need to be set for each year of school life in order that nothing shall be neglected. Achievement, though, need not be limited to such goals if the needs and desires of individuals or the group extend further. With the goals of the year in mind, the teacher should provide stimulating experiences, either by

direct or by vicarious means, which will encourage written and spoken communication by the children under her guidance.

Expression should be encouraged but not forced. No one ever learned to speak well or write well unless he had the desire to do so. The teacher serves not as a tasksetter and drillmaster but as a stimulating, encouraging, and guiding force.

Grammar, spelling, penmanship, and composition are of value only as they contribute to the basic goal of better communication. In themselves they have no value.

Drill is not to be neglected as need is shown in connection with actual situations. It should always, though, be entirely functional and highly motivated.

The teaching of language is carried on during every part of the school day, in connection with every area of instruction and every situation, but a definite period devoted to definite training in communication is also needed as a broad experience. This is necessary to make certain that goals are achieved and to give practice in needed skills.

The language arts should be taught as a whole, and not piecemeal by having a definite period for grammar, composition, spelling, and penmanship. In life, communication is a whole and not a series of cut-up pieces. Drill may take place, however, in the various phases and needs and interests that are shown.

Above all, the language arts need to be based on real experiences. No one ever wrote well or spoke well on a topic about which he knew nothing or for which he had no interest or emotion.

SELECTED REFERENCES

1. BLAISDELL, T. C. *Ways to Teach English*. New York: Doubleday, Doran and Company, 1930.
2. DOLCH, EDWARD W. *Better Spelling*. Champaign, Ill.: The Garrard Press, 1942.
3. EGG, J. MURRAY, and LEE, DORRIS MAY. *The Child and His Curriculum*. New York: D. Appleton-Century Company, 1940.
4. LANE, ROBERT H. *The Teacher in the Modern Elementary School*. Boston: Houghton Mifflin Company, 1941.

5. MACOMBER, F. G. *Guiding Child Development in the Elementary School*. New York: American Book Company, 1941.
6. MENDENHALL, J. E. *An Analysis of Spelling Errors*. New York: The Lincoln School of Teachers College, Columbia University, 1930.
7. REED, H. B. *Psychology of Elementary School Subjects*. Boston: Ginn and Company, 1927.
8. SAUCIER, W. A. *Theory and Practice in the Elementary School*. New York: The Macmillan Company, 1941.
9. SEELEY, H. T. *On Teaching English*. New York: American Book Company, 1933.
10. WASHBURNE, CARLETON. *A Living Philosophy of Education*. New York: The John Day Company, 1940.
11. *Thirty-Eighth Year Book of the National Society for the Study of Education*. "Child Development and the Curriculum." Bloomington, Ill.: Public School Publishing Company, 1939.
12. *Forty-Third Year Book of the National Society for the Study of Education*. Part II: "Teaching Language in the Elementary School." Bloomington, Ill.: Public School Publishing Company, 1944.

The Skill Subjects: Mathematics

I. MATHEMATICS — A MODERN NECESSITY

TWO FACTS have brought home the realization that a working knowledge of mathematics is a necessity for modern living. The first is the part that mathematics played in the training of our armed forces. The early months of the war demonstrated that mathematics was a prerequisite to many skills demanded by all the Services.¹ The second fact is the adjustment required of civilians under a program of rationing, price controls, ceiling prices, and other aspects of a war-time economy and the resultant extension of learning in elementary mathematics during the last few years. If such controls are to continue, even in part, the future content of mathematics can be easily forecast. It will be the mathematics that can be used in computing income taxes, in budgeting, and in efficient purchasing — the kind that will enable Mr. Average Citizen to read graphs and charts dealing with national and international economy. Such charts are appearing with increasing frequency in newspapers, in trade journals, and in books. As citizens in a democracy we shall have a greatly increased need to understand economics and to determine the validity and reliability of data. In other words, mathematics has shifted from its earlier function of a tool for making the individual effective in his personal dealings to its present value as a tool for understanding and interpreting national and international relationships.

This broader second fact has not yet been generally realized by educators, and the first has been entirely mis-

¹ For a comprehensive statement of general purposes in mathematics see WILSON, Guy M., and others. *Teaching the New Arithmetic*. New York: McGraw-Hill Book Company, 1939; and PROGRESSIVE EDUCATION ASSOCIATION. *Mathematics in General Education*. New York: D. Appleton-Century Company, 1940.

understood. Because certain branches of the Services charged the schools with inefficiency, many schools immediately subjected all children to a strict, unyielding course in mathematics. This action was indefensible because it represented a disciplinary point of view rather than the modern concept developed in many Army training centers. It was mathematical skill not disciplinary effects that the Services required. And further, in the rush toward a disciplinary type of program, teachers lost sight of the fact that individual growth differences are about the same in war-time as they are during more peaceful days.

To sum up, it would seem that mathematics must henceforth occupy a much more important position than ever before in helping the individual live effectively. Its content will greatly change. There is need, then, to survey the problem and to point out ways and means by which it can be solved.

II. INDIVIDUAL DIFFERENCES

As in other subject-matter fields, individual differences are found in achievement in arithmetic. In a well-known school, somewhat above the average in the way of facilities and training of teachers, differences in ability of individual pupils ranged from 2.9 years in both fourth and fifth grades to 6.8 years in the seventh grade (see Table IV). Even greater differences would probably have been discovered had the maximum grade level of the test exceeded the ceiling of 10.0.

TABLE IV
ABILITY RANGES

<i>Grade</i>	<i>Grade Level Range</i>	<i>Spread of Grade Level</i>
4	3.4-6.3	2.9
5	3.8-6.7	2.9
6	4.8-8.5	3.7
7	3.2-10.0	6.8
8	5.4-10.0	4.6

In this school, in which average achievement was considerably above the "norm," the following picture of retardation existed (see Table V). This table shows that 15.6 per

TABLE V
PER CENT OF RETARDATION

Grades	Retardation in Months					Total Per Cent Retarded	Average Retarda- tion in Months
	1-5	6-11	12-17	18-23	24-Up		
4	15.6	6.0	—	—	—	21.8	3.7
5	15.0	27.5	2.5	—	—	45.0	6.6
6	16.6	16.6	10.0	3.3	—	46.6	5.8
7	3.0	—	—	—	3.0	6.0	15.0
8	20.0	4.0	—	4.0	4.0	32.0	8.5

cent of the fourth-grade pupils were from one to five months below their grade level, 15.0 per cent of the fifth, 16.6 per cent of the sixth, and so on down the column. The next four columns may be read in the same manner. The next to the last column indicates that 21.8 per cent of the fourth grade were below grade level, 45.0 per cent of the fifth, 46.6 per cent of the sixth, 6 per cent of the seventh, and 32 per cent of the eighth. Totaling the number of months of retardation in each grade and dividing by the number of retarded pupils gave the average amount of retardation for each grade; this result is shown in the last column. Among the pupils having difficulty, there was an average retardation of three and seven tenths months in the fourth grade, six and six tenths in the fifth grade, and so on.

It would only be fair to point out that in this school acceleration was even more marked (see Table VI). These two tables indicate the great amount of individual differences to be found in schools.

Whether such a condition is desirable or not is debatable. There is no doubt, however, that it is rather common. Mead,¹

¹ MEAD, C. D. *An Experiment in the Fundamentals*. Yonkers-on-Hudson, N. Y.: World Book Company, 1917.

TABLE VI
PER CENT OF ACCELERATION

Grades	<i>Acceleration in Months</i>					<i>Total Per Cent Acceler- ated</i>	<i>Average Acceler- ation in Months</i>
	<i>1-5</i>	<i>6-11</i>	<i>12-17</i>	<i>18-23</i>	<i>24-Up</i>		
4	21.8	18.7	18.7	6.0	—	65.6	8.3
5	10.0	22.5	7.5	—	—	40.0	7.0
6	16.6	16.6	10.0	10.0	—	53.3	10.0
7	15.1	9.0	12.1	27.2	15.1	78.7	16.0
8	16.0	4.0	24.0	20.0	—	64.0	12.4

using the Courtis tests among four hundred and twenty-four fifth-grade pupils in Cincinnati, obtained scores ranging from zero to twenty. Such a variation, according to Reed,¹ represents degrees of ability from that of a baby to that of a trained clerical worker. Comparable reports of more recent investigations lead one to conclude that the situation remains rather constant in spite of changing times.

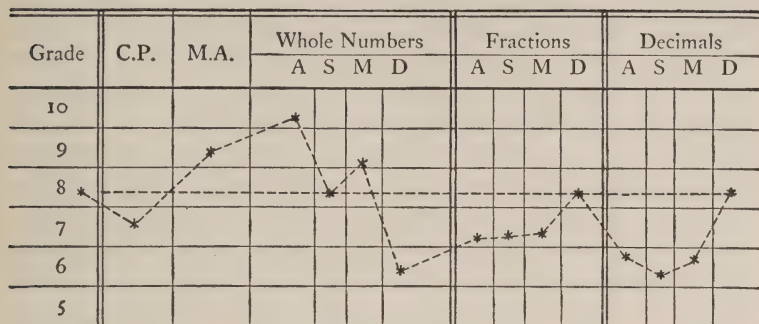
Arithmetic is made up of many types of skills. Addition, subtraction, multiplication, and division are fundamental but each involves related and unrelated complex processes. To illustrate the difficulty of guiding the learning of so many processes in a typical classroom we present a special analysis of a selected case.

The eighth-grade pupil chosen had a grade age equivalent to that of mid-ninth grade children. On the Stanford tests she stood 9.0 in reasoning and 7.1 in computations. Although her average grade-level achievement was about 8.0, she was referred to the clinic because of "lack of knowledge of pre-requisite skills and lack of interest in subject matter." The profile (see Table VII) indicates her great range of performance among various fundamental arithmetical skills. She varied from mid-sixth grade to almost mid-tenth grade. Because of her satisfactory average she might have been overlooked. Although not seriously retarded she might well

¹ REED, H. B. *Psychology of Elementary School Subjects*. Boston: Ginn and Company, 1927, pp. 177-190.

TABLE VII

CASE I, L. B.



be considered a fit case for assistance. It is obvious from the table that she is superior in the addition and multiplication of whole numbers, and inferior, dropping to sixth-grade level, in division of whole numbers. In dealing with fractions and decimals, this child was adequate only in division, and inferior in addition, subtraction, and multiplication.

The variation in performance shown by this rather normal child clearly indicates that differences within the individual are about equivalent to the range of differences found in the classroom. Such a problem is difficult to solve. Not only are individual differences to be found between children, but differences among the various skills of a given child are about as great.

III. CHANGING OBJECTIVES

Mathematics came into the curriculum for two reasons. First, it inherited the "mental discipline" values of the earlier academic institutions, the college and the secondary school. It purported to discipline the mind, to sharpen one's intellectual processes, and to bring into full flowering the thought processes of the individual. It has always been considered a "difficult" subject, and its very difficulty gave it the qualities supposed to be necessary for sharpening general mental powers. Much experimentation has indicated that such beliefs are based on false premises and that the subject does not have the disciplinary value which long justified its existence.

Second, mathematics, particularly arithmetic, was believed to be a functional subject. When arithmetic was introduced into the curriculum, the United States was a nation of producers who sold their goods directly to the retailer or the consumer. Shoes were custom made and sold by the cobbler directly to his customer. Men's suits, except those made in the home, were made by the tailor in his little shop. Not only the manufacturer but the laborer himself needed certain arithmetical skills. Every laborer bargained directly with his employer in respect to rate of pay. Each person, consequently, had need of producer's arithmetic to secure adequate prices for what he sold, whether it was labor or the finished product of labor. And in commerce itself there was much greater need for computational skills than is now necessary. Comptometers and other such labor-saving machines were unknown. Computations of an arithmetical nature had to be done mentally or by tiresome paper and pencil activity. Boys and girls at an early age were forced by economic needs to assist the father in his trade or business. As a result, there was a functional need for the kind of arithmetic found in an earlier day.

Arithmetic in the last two decades has been treated much more simply. Both computational and applicational problems are becoming adapted to the hobbies and interests of children. Even fundamental and skill problems are being pushed farther and farther toward the upper grade levels. Consequently, the learning of skills is being related more and more to the maturation of the child. This means that the period of growth of a rapid upward sweep is being utilized to further the learning of basic fundamental skills. There is no debating the fact that the period of rapid physiological growth of the child is the period in which the greatest learning takes place. Nor is there any debating the fact that delaying fundamental presentations does not affect the maximum to which the child eventually rises (see Figure 21).

Delayed presentations reflect knowledge of research in child growth and development. Schools following this plan are helping to relieve arithmetic of much of its supposed inherent difficulty. They are also relating the presentation of material to the laws of child growth; and while the results

are perhaps no more effectual, as illustrated in the Figure, they do not carry into the minds of children the unnaturalness, difficulty, and confused concepts that mark the presentation of material at a time that is incompatible with

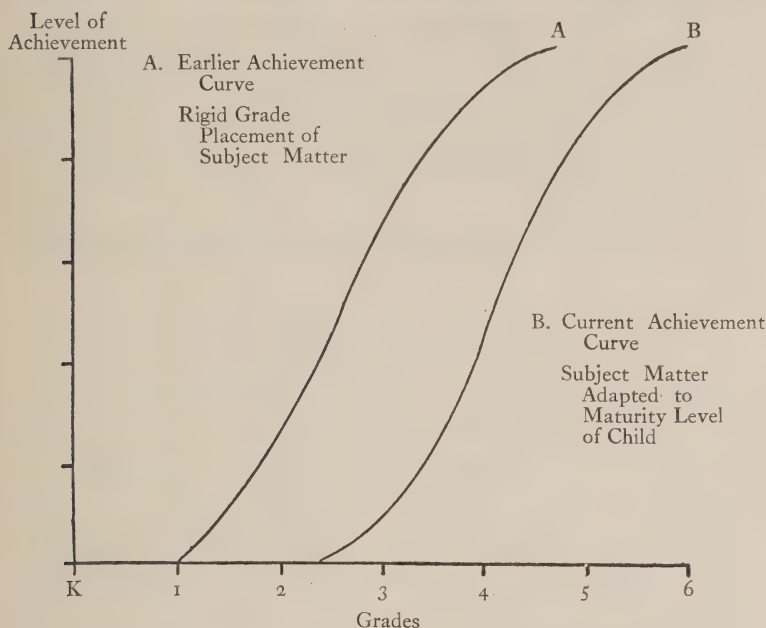


FIGURE 21. Then and Now in Arithmetic Achievement

rapid, easily attained growth. One of the best statements of changes taking place in the arithmetic program has been made by Hildreth:¹

1. More real and functional purposes underlie the modern arithmetic curriculum. There is less teaching of some obscure fact or principle to enable children "to pass an examination," and more arithmetic that enables children to meet the practical number situations of daily life with ease and accuracy.

2. Direct practice in abstract number combinations is postponed to a later period in the child's school experience.

3. The introduction to primary number work occurs more frequently through informal experiences and activities.

¹ HILDRETH, GERTRUDE H. *Learning the Three R's*. Minneapolis, Minn.: Educational Publishers, Inc., 1936, pp. 157-158.

4. More gradual transition takes place from concrete to abstract number experiences in the lower grades.

5. A lightened load in arithmetic practice in all grades has resulted from postponed learning in some areas, and elimination in others.

6. Less direct teaching of number facts and processes is apparent in all grades. More opportunity for number experiences is provided throughout the child's school life. Arithmetic is linked to activities and genuine number situations.

7. There is earlier introduction to problem solving through number situations and experience, more functional arithmetic at every stage.

8. More advanced and complex number computation exercises are postponed until children show requisite maturity for them.

9. Improved problems, with simplified, modern terminology, and involving realistic and practical situations, fewer "catch" or "manufactured" problems appear in textbooks and drill materials. Lists of problems prepared in advance are giving way to genuine arithmetic situations.

10. Improved drill techniques make number performance more automatic, accurate, and secure. Drill is more specific, and based on actual inventories of pupil requirements.

11. Improved instructional material places more responsibility on the child for achievement and frees teachers from formal teaching and generalized drills.

12. More provision is made in modern schools for individual differences in arithmetic aptitude and achievement. Goals and standards are differentiated; the program is simplified for slower learners. Suitable groupings are provided for pupils for instructional purposes. The program is individualized so far as possible.

Thus the objectives of this modern day and age are considerably changed from the earlier disciplinary, vocational values. Modern objectives may be summarized as follows:

1. The development of simple, fundamental computational skills for functional applications.

2. The development of appreciation of the relationship of arithmetic to daily living at both child and adult levels, this skill to be accomplished through integration of mathematics with other school subjects and with the hobby and interest activities of children.

3. The development of skill in generalizing arithmetical data, and an ability to interpret such data in graphical and chart form.

4. The development of ability to determine the relevance and validity of mathematical data and the significance thereof.

Again, as in other skill subjects, the ability to manipulate mathematical data is a means to an end. In the school, it should be taught as a means to an end, a means toward other accomplishments. At the adult level, if it is anything at all, it is a means to an end — efficiency in shopping, looking over estimates, figuring travel costs, keeping a budget, and other utilizations which lead to effective living.

IV. PERSISTING PROBLEMS

The amount of time normally spent on the teaching of arithmetic should result in a much better product than the one well known to most of us. Six or even eight years of persistent drill, home study, threats from both teachers and parents should allow us to expect something more than inability on the part of most children to handle simple numbers in computations and to solve most of the arithmetical problems faced in daily living. In most schools arithmetic is not learned, let alone taught, as a functional tool, but as a device for labelling children according to their ability or inability to handle arithmetical abstractions.

All one needs to do to get a clear view of the fact is to talk with a sixth-grade teacher who is about to promote her pupils into the junior high school. Junior high school teachers complain year after year about the incompetence of their new groups. Fractions are an enigma to most of them, and decimals are even more baffling. It does not take much examination to locate the source of the trouble.

Arithmetic, as taught, is distasteful to very many children. It is unrelated to their normal activities. In spite of the fact that problems may deal with laying out a baseball diamond, not much relationship is perceived if the recess period ends as a fifth-inning rally is taking place and the children are called in to "work problems." Probably the greatest evil is the drive

made by the teachers for coverage. It does not take long to leave many children far behind in the race between the course of study and the monthly calendar; but rather than admit the need for help, they try to cover up their weaknesses.

GRADE PLACEMENT. Much of this trouble could be eliminated with better grade placement of materials. With few exceptions, the expectations of teachers are far beyond the mark, illogical, and psychologically bad. In most schools teachers are either completely naive as to what children can learn or else they are forced by public pressure to maintain a position which they know is false. There is certainly little question but that they are holding to standards imposed by adults rather than developing a program in accord with what children can normally accomplish.

Washburne has pointed out that the arithmetic usually taught is, in terms of mental difficulty, considerably over the heads of the children concerned.¹ To substantiate this view all that is necessary is to point out that few children on leaving school have mastered long division, fractions, or even much of percentage.

The arithmetical skills of the average beginning seventh grader should convince anyone that something is wrong with grade placement. Only a few schools have indicated a willingness to develop a program which emphasizes meanings and concepts, skills and applications, and to take the necessary time to do the job. The idea that long division should take one year and fractions another, is without foundation. Probably the basic defect of grade placement is the idea that one phase can be introduced, studied, and mastered, then another phase, another, and another. Knowledge of how children grow and mature would indicate that the various phases, while requiring different starting periods, reach a terminal point about the same time. Such a terminal point would be the time at which a given cycle of growth is reached. According to this view division would be started earlier but would be continued along with fractions and other content. It is a faulty idea that mastery can be achieved as a series of

¹ WASHBURN, C. W. "One Reason Children Fail in Arithmetic." *Progressive Education*, IX: 215-223, March, 1933.

links in a chain. A better idea of the process would be conveyed by portraying the learning of mathematics as strands in a cable (see Figure 22).

According to this view achievement of all phases of growth in arithmetic will reach a levelling-off point as the child ap-

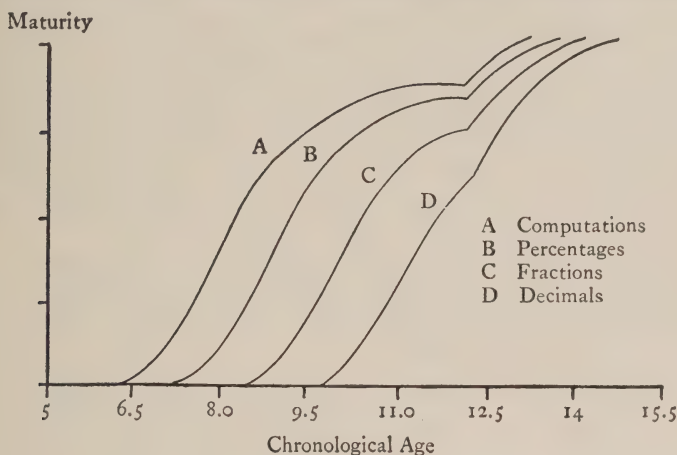


FIGURE 22. The Paralleling Idea of Mastery

proaches adolescence. Some skills will reach near-perfection before the beginning of adolescence; others will level off, according to difficulty, at differing maxima, and then rise again, with good instruction, during the junior high school levels. The main point is that the teaching of many phases of arithmetic should be paralleled. Some skills should not even be introduced until the seventh or eighth grade. It is heresy to suggest that children should have no formal work in fractions, for instance, until they reach the junior high school and yet evidence in favor is found by investigators of the problem.

THE PROBLEM OF CONTENT. The course of study in arithmetic was founded on what were considered basic skills in early American commerce and industry. Problems on paper-hanging, carpeting, surveying, and determining bin volume are examples of this heritage. Today, of course, such problems cannot be justified. Complicated fractions and decimals can also be challenged. The uselessness of much of the earlier

content is admitted by almost everyone. This raises the question of what should be offered.

Some ninety per cent of adult use of mathematics lies in the four fundamental processes of addition, subtraction, multiplication, and division. Long division, considered by so many as basic in the elementary school curriculum, is hardly ever used by adults. Beyond simple calculation it is difficult to predict adult needs. What are adult needs today may be entirely outmoded tomorrow. Population is so mobile that a child reared in the country may later live in a large city; a youngster born in the South may make a place for himself in the North; or a boy growing up on the Pacific Coast may become a resident of New York City.

Occupational shifts further complicate the problem. In this age of rapid development of new opportunities, an engineer may and often does become a salesman, a lawyer, or a corporation executive.

The question, of course, can be raised as to whether the school content can be based on what is considered adult use. Studies show, however, that children use about the same computational processes as do average adults.

It would seem, then, there is some evidence that all arithmetic in the elementary school can be based on children's interests and needs. It is also felt that where interest and needs are the core around which project or unit activity is developed, arithmetic can be brought naturally into the curriculum. And this is even more true where advantage is taken of the extra-curriculum as well as the curriculum for relating arithmetic to child needs. For instance, children give parties at school. If they are allowed to help in the planning of such events, problems involving purchases are sure to receive attention. The selection of refreshments, their relative costs, and methods of financing are all questions of a practical nature. For example, in a certain school, pupils were planning a party to which their parents were to be invited. They had a little money on hand which had been earned by the group. In considering what they would serve, they consulted the handbills and advertisements of neighboring stores for costs. First of all the children made up a menu they would prefer. They discussed whether they could afford the fresh fruit

desired for a salad or whether they could make it as attractive by using canned fruit, thus saving money for a larger menu. As a result, the entire question of food values was raised and the class launched into a study of it. These children learned mathematics, something about relative costs, and something about dietetics.

There are many other social situations within the school that could serve equally well as illustrations of functional applications of mathematics. Suggestions, both curricular and extra-curricular, carried out through unit activity and special activities, are:

1. Measurement
 - a. Measuring lumber for construction work
 - b. Measuring cloth for costumes, curtains
 - c. Measuring material in constructing stage scenery
 - d. Measuring ingredients for recipes for refreshments
2. Counting
 - a. Taking attendance
 - b. Taking lunch orders
 - c. Summarizing stamp sales
 - d. Money from supplies
3. Purchasing, and Handling Money
 - a. Buying supplies for refreshments
 - b. Buying supplies for animal house
 - c. Buying supplies for plays
 - d. Paying for purchases
 - e. Keeping records of purchases and payments
 - f. Handling class money
 - g. Collecting and handling money through Junior Red Cross, stamp sales, etc.

An actual record of applications of mathematics to the activities of children would be very long in schools where an attempt was really made to make mathematics functional.

INCIDENTAL LEARNING. To what extent can we depend on projects or centers of interest for functional applications and for motivational areas of study? Mathematics learned by this means is well learned. It has an advantage over formal class presentation, which often seems to deal with abstractions rather than actual situations. To discover the truth of this statement, the reader need only take a good-sized board into

a classroom where children have been studying board measurement and note their inability to solve concrete problems.

There is no doubt, however, that for certain computational processes considerable time must be spent in practice and drill. It must be remembered that the learning of tables requires both maturation and time. Instead of allocating certain combinations to a given week, another quota the following week, and so on, it is more desirable to provide the child with some aids and allow him to learn the necessary combinations and tables as he uses them.

Some years ago one of the authors used the following device. All children in grades three, four, and five were issued tables with all the combinations of addition, subtraction, and multiplication. Enlargements of these tables were placed on the wall behind the children. The combinations were learned without effort and without the pressure and fear inevitable in the time-budget plan of learning, which makes no allowance for individual differences. Learning was incidental. In other words, computational skill was entirely a means to an end.

This does not mean that there can be no direct approach. When the class needs to know a new skill, time will have to be taken to teach it. We do not object to direct teaching if it helps children learn a skill needed for the solution of a problem in some way related to their broader interests.

V. THE RELATION OF GROWTH TO ARITHMETICAL LEARNING

Time can be of great assistance to the teacher interested in relating mathematical content to the maturity of the child. This means that teachers must learn to be cognizant of the cycle effect of growth and its implications for readiness or the period of background learning, its implications for rapid skill learning, and its implications for applications and drill.

The readiness period is a time when the child is just beginning a cycle of growth. It is the slow-beginning, slow-rising curve in which there can be considerable variation in per-

formance. In the second grade, for example, with very simple combinations the skill is here today, gone tomorrow, and back the next day. At this stage of development such variability is natural, and therefore background activity rather than new learnings should provide the basis of work (see Figure 23). Readiness is usually associated with the early

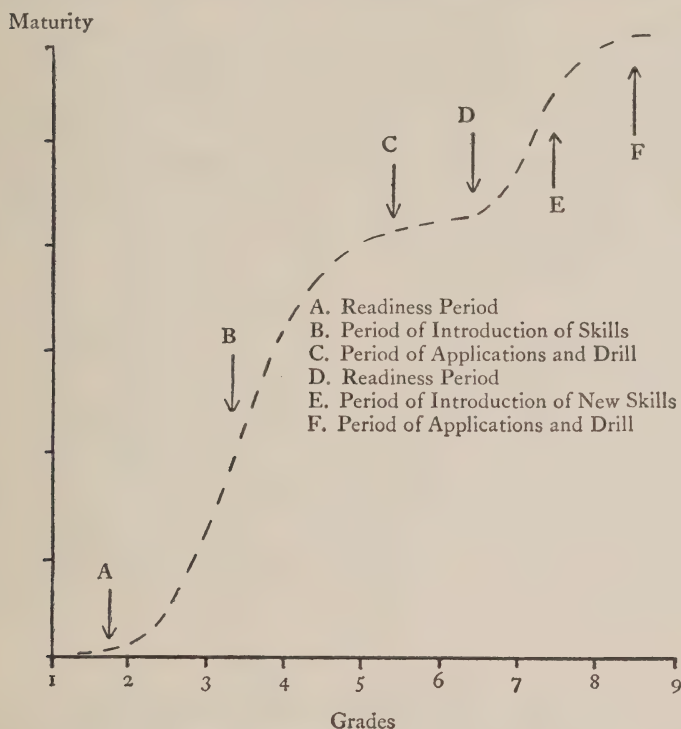


FIGURE 23. Relation of Growth to Learning in Arithmetic

elementary grades but really it should be thought of as a stage of development occurring at the beginning of any cycle of growth. It occurs again at the time preceding adolescence, the period in which learning "rounds off" and appears to be slowing down. This also is a period of instability and a time when new skills should not be presented. Applications of functions already learned may be developed and drill can be stressed.

In the school life of the child there are two periods when new skills can be most advantageously introduced because most learning takes place there. These are the times of the up-sweep of the two cycles of growth shown in the preceding Figure.

In connection with setting up guides for learning in accordance with the development of the child, a few words may be said concerning mathematics in the seventh and eighth grades. Many of the recent arithmetic series present a new type of mathematics for these grades directed toward the understanding and application of skills as a prerequisite for high school mathematics. From the standpoint of development, the child is ready for such presentations. In this respect junior high school mathematics is in accord with the facts of child growth and development. These texts, however, make an error in assuming mastery of fractions, decimals, long division, and the more complicated aspects of arithmetic. These skills must be taught to most children in the junior high school grades. Thus some reshuffling of content must be brought about to coordinate the presentation of each. It would seem to the writers that this might be accomplished by projecting general mathematics through all three junior high school grades, with coordinated work in the more difficult arithmetical functions that cannot be mastered in the first six grades. Algebra, from this point of view, is inadvisable in the ninth grade except for the most able and mature pupils.

VI. ORGANIZATION OF THE PROGRAM

The purpose of this section is to point out an innovation which more teachers might use. Before doing so, it is necessary to review the fundamental principles of class organization described in Chapter 3. In the programs described in that chapter, several ways of handling arithmetic have been indicated. In some of the programs it is taught as a separate skill; in others, and as implied earlier in this chapter, it is taught in the over-all unit whenever the opportunity presents itself. And further, it becomes part of a "skills and techniques" period. This is particularly true in the Grade Six

program of the Alabama Elementary Schools (see page 68). The implication there is that much arithmetic can be taught in the total school program, with drills and bothersome processes emphasized during the supplementary "skills and techniques" period. This might be thought of as a kind of workshop period in which assistance would be given as children discover their need in all skills and drills.

The idea offers even greater possibilities as children progress through the grades. In the upper elementary or junior high school grades, it becomes very important as an organizational device for levelling individual differences, which are at their peak at these ages. On an all-school basis, it has further possibilities: some pupils in the fourth, fifth, and sixth grades can be assigned to a "workshop" period in mathematics, another group to a period in the language arts, and still another to a period in an arts and crafts workshop.

Wide individual variation demands much individual attention. The extra, informal, differentiated assignment will do much for the teacher with no resources for additional assistance. In arithmetic, the development of the dual scheme presented here — correlating arithmetic with other subject areas and providing a supplementary period for skills and drills — is superior to the plan in which arithmetic is entirely individualized and only vicariously or indirectly related to group and individual unit activity.

VII. THE CONTENT IN OUTLINE

At the outset it should be said that the current organizational scheme makes it difficult to present a grade-by-grade sequence. Individual differences, as pointed out earlier, necessitate the teaching of skills to children who vary from three to five or six years in achievement. Grade-by-grade sequence, then, must be understood as only tentative, and each teacher must realize that skills taught in any one grade must be drawn from several grade levels. It must also be remembered that none of the skills presented in any one grade are necessarily those delegated to that grade. Learning follows the developmental cycles of the child and not a grade-by-grade sequence.

GRADES I AND II, PERIOD OF READINESS. This is the time in which there is no, or little, formal mathematics. The teacher may find it necessary to explain many informal situations. For example, concepts of relative numbers can be developed by counting. Measuring and weighing may be necessary. A consciousness and meaning may be developed by reading numbers on automobile license plates, price labels, telephone directories; by writing attendance figures, scores of games, milk receipts; by telling time; by paying for lunches, refreshments, supplies; by introducing the idea of fractions such as one half and one fourth; and by dividing paper or refreshments.

In the upper second grade there will be children who need an introduction to more complex number concepts. Counting by 2's, 5's, 10's, and possibly 3's and 4's is logical for some children. In some instances addition combinations up to approximately ten, along with simple reasoning problems, are appropriate.

As soon as the child begins to handle numbers in combination, it is desirable to obtain practice in estimating what would be twice, or bigger, or smaller. This, rather than blind or rote computation according to direction, is the kind of practice that leads to an understanding of numbers.

GRADES III, IV, V OR IV, V, VI, PERIOD OF RAPID LEARNING. For boys the period of rapid learning is through the fourth, fifth, and sixth grades. For some girls it is the same, but for others it is represented by the third, fourth, and fifth grades; in such cases the sixth represents the beginning of adolescence and a new phase of learning and growth.

Introduction to the one hundred primary addition facts and the one hundred subtraction facts is desirable as soon as the child can handle numbers below ten and faces the need for these combinations. A method of teaching which makes the learning of these an automatic procedure — the use of combination cards, for example — is preferable to the drill techniques which allot the learning of them to a definite date on the calendar. It will be necessary to use fairly long columns and several addends in addition, as well as problems in subtraction involving several digits. A beginning should be made on the 144 primary multiplication facts, the "times"

tables must be reviewed, and multiplication with multiplicands and multipliers of several digits each may be introduced, along with short division seen as a reverse of multiplication. The idea of fractional parts must be developed so that later study will not appear as abstract and unreal. Long division should be explored.

PERIOD OF DRILL AND APPLICATION. As boys and girls appear to be reaching a plateau, or when improvement seems to be levelling off, drill can be used more frequently. This is also the time for applications, for estimating answers, for evaluation, for thought problems in which understanding is the goal rather than coverage of materials. Improvement can now be brought about even where standardized test results show no improvement. This apparent inconsistency can be explained as the child's shift from the stage of "thinking he knows" to the stage of "knowing he knows." Teachers can relax and spend their time on reviewing, consolidating, explaining, and utilizing in functional applications the skills already learned. Test results do not present the entire picture for children at this phase of development.

GRADES VII AND VIII, PERIOD OF READINESS. This is a short period for some, a somewhat longer one for others, and in reality a continuation of the period in the late sixth grade. Actually it is the slow beginning of a new cycle of growth. There should be a review of what has been previously learned, such as long division and simple fractions, with as much time spent on them as is necessary for adequate learning.

PERIOD OF RAPID LEARNING. As growth begins again, new processes may be introduced: more graphical study, decimals in simple form, and percentage work. Integration of all skills with project activity is most desirable at this level. Generally, it must be assumed that skills previously levelled off will make new gains. Continued practice in all skills is needed, with increased difficulty as occasion demands.

VIII. IN CONCLUSION

In the main, if the suggestions in this chapter were applied, there would be considerable improvement in the quality and quantity of arithmetical learnings. Children grow physio-

logically. The criticism of conventional teaching is that they do not learn in proportion to that growth. Our suggestions are based upon the idea that learning in arithmetic can be correlated with the natural growth of the child, with results considerably better than usual.

Our first plea has been for simplified requirements. Far too much content is expected in every grade of the elementary school. The introduction must be delayed and upper elementary grade presentations pushed into the junior high school.

This must be done for three reasons. First, the learning curve in arithmetic must lag behind the learning curve in reading. Children cannot do arithmetic satisfactorily unless they can read. Skill in reading implies not only word recognition but comprehension as well. Those schools that introduce arithmetic early, about the same time as reading, assume that reading as applied to arithmetic means only an identification of numbers. The child sees numbers in a book or on the board, looks at them, and says them. This is what might be called word recognition. Comprehension is entirely lacking. The child reads but has little comprehension of meaning. A delay between the reading curve and the arithmetic curve will enable teachers to teach concepts of numbers much as they teach concepts and comprehension in reading.

Second, our plea for simplified requirements is designed to bring more closely together the peak periods of physical-social development and the peak periods of arithmetic achievement. If this is logical, it is necessary to abandon the idea that one skill can be mastered in one grade, another skill in the next grade, and so on. All skills, except in the case of pupils who are very adept in arithmetical learnings, will reach peak periods about the same time. This is true whether they are taught in accord with this idea or whether they are taught as separate sequences. Our point is that if they are all brought along together, they will be more adequately learned.

Third, teachers have misunderstood the difficulty of the skills they have expected children to learn. Intelligence tests provide evidence that many of the problems presented at third- and fourth-grade levels in most schools are equal

in difficulty to items presented in intelligence tests for sixth-, seventh-, and eighth-grade children. To simplify requirements is not to be soft or to admit inability on the part of children.

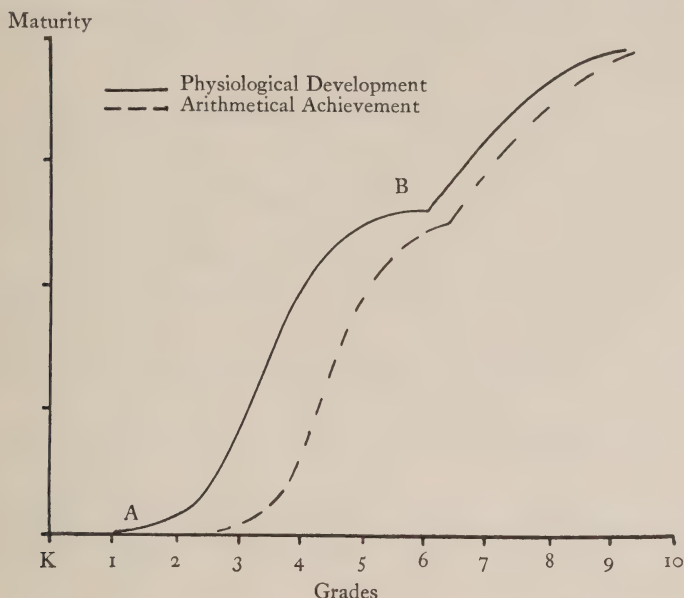


FIGURE 24. Possible Relation of Arithmetical Achievement to Physiological Development

It is a move to use what science we have to make learning more effective.

Our second plea is for observation of how children grow and learn. In this connection, the cycle pattern of maturation of the child has been pointed out as the guide for developing the whole program. The relationship between physiological development and the development of arithmetical skills is at present a matter of research and experimentation. Undoubtedly, there is a lag between the two (see Figure 24). There is much evidence, however, that the early slow growth periods (A and B in Figure 24) are indicative of the proper time for readiness activities, and the flat period preceding B the time for drill and applications. Such a concept implies that individualization must play an important role in planning instructional policies. The physical-social growth curves are

determined by more than the fact that children are separated according to grades. Such a curve of development would truly provide the best known means for grouping. But children who are together in status at one time are considerably different months later. Therefore, any grouping must be very elastic.

Teachers who have put into practice the suggestions already made find they have sufficient time remaining to develop real understanding and comprehension of the meaning and use of numbers. So much time is spent by conventional teachers in pushing children to learn tables, which children even then do not learn well, that they never do have any idea of what numbers mean. The writers, in a teacher training program, are accustomed to dealing with bright, intelligent college students who do not know that 80 per cent is written as .80 and who, when they divide one by eighty-six hundredths ($\frac{1}{.86}$), have no idea what the answer is going to be. If they make an error which gives them an answer of .25, they are blissfully unaware of the mistake until it is called to their attention. Such errors are probably an indication that time has been spent in drill on combinations. Much improvement is possible here. Combinations can be learned automatically through the use of combination sheets, as already described, and the time thus saved might better be spent on problems where only estimates of answers are to be made and on problems where students could be given much practice in analyzing what is to be done.

In other words, a plea has been made for a critical evaluation of problems in terms of processes to be used, estimating answers, and an understanding of numbers and of skills.

SELECTED REFERENCES

1. COMMISSION ON SECONDARY SCHOOL CURRICULUM OF THE PROGRESSIVE EDUCATION ASSOCIATION. *Mathematics in General Education*. New York: D. Appleton-Century Company, 1940.
2. HILDRETH, GERTRUDE H. *Learning the Three R's*. Minneapolis, Minn.: Educational Publishers, Inc., 1936.
3. HOCKETT, JOHN A., and JACOBSEN, E. W. *Modern Practices in the Elementary School*. Boston: Ginn and Company, 1938.

4. LANE, ROBERT H. *The Teacher in the Modern Elementary School*. Boston: Houghton Mifflin Company, 1941.
5. MACOMBER, F. G. *Guiding Child Development in the Elementary School*. New York: American Book Company, 1941.
6. MEAD, C. D. *An Experiment in the Fundamentals*. Yonkers-on-Hudson, N. Y.: World Book Company, 1917.
7. MORTON, ROBERT LEE. *Teaching Arithmetic in the Elementary School*. 3 vols. New York: Silver Burdett Company, 1937, 1938, 1939.
8. REED, H. B. *Psychology of Elementary School Subjects*. Boston: Ginn and Company, 1927.
9. WASHBURN, CARLETON. *A Living Philosophy of Education*. New York: The John Day Company, 1940.
10. WILSON, GUY M., STONE, MILDRED B., and DALRYMPLE, CHARLES O. *Teaching the New Arithmetic*. New York: McGraw-Hill Book Company, 1939.
11. *Teachers' Guide to Child Development in the Intermediate Grades*. Sacramento, Calif.: State Department of Education, 1936.
12. *Tenth Year Book of the National Council of Teachers of Mathematics*. "Teaching of Arithmetic." New York: Bureau of Publications, Teachers College, Columbia University, 1935.
13. *Sixteenth Year Book of the National Council of Teachers of Mathematics*. "Arithmetic in General Education." New York: Bureau of Publications, Teachers College, Columbia University, 1941.

The Sciences in the Curriculum:

The Social Studies

I. FUNDAMENTAL VIEWPOINTS

THE FUNDAMENTAL purpose of the social studies is to improve the democratic way of life.¹ If we are to accept the point of view that the schools have an important part to play in such a program, we must consider certain principles.

Democratic living and understanding, far beyond current attainment, is not an idle dream. While we must admit that the problem of making it a reality is a great one and that thinking on the subject so far is vague, we must believe that a broader realization of democratic goals is certainly within our range of achievement.

At present our social organization is much inferior to our scientific development. As a result, although scientific knowledge and natural resources are abundant, millions of people live under conditions which provide little incentive for improving democratic life. If changes are to come about, the schools must assume considerable responsibility. On the other hand, those who administer and control the public funds devoted to public education are all too frequently out of sympathy with the idea of doing so. This fact alone makes the task difficult. Again, teachers themselves often fear change and lack a vision of the need for a revised social

¹ For a comprehensive statement of the present objectives of the social studies, see BRANOM, FREDERICK K. *The Teaching of the Social Studies in a Changing World*. New York: W. H. Sadlier, Inc., 1942; LACEY, JOY M. *Teaching the Social Studies in the Elementary School*. Minneapolis, Minn.: Burgess Publishing Company, 1941; and WESLEY, EDGAR B., and ADAMS, MARY A. *Teaching Social Studies in Elementary Schools*. Boston: D. C. Heath and Company, 1946.

studies program. And, too, there are many teachers who consider their function to be merely the presentation of factual material and who are not really in sympathy with the broader objectives of the social studies. Those who fail to see hope for a better citizenship will accomplish little in bringing it about!

There are many who have no faith in society. Such people are those who say that "history always repeats itself." Thinking of this kind comes from the fact that progress follows a fluctuating road made up of so many high and low points that the observer loses his perspectives and fails to see any one aspect in relation to the total.

The teacher who would participate in a program with such an objective as the one stated here, must believe in the inherent goodness of society itself. Society, like the individual, has potentialities for growth. Great cultural and spiritual developments have evolved in spite of change and political decay. Only through sharing in this belief can the schools aid in the development of an improved way of life.

Furthermore, achievement of the broader goals of democratic life can come about only through faith in the potentialities of the individual. Some teachers are annoyed by the elasticity which must be given boys and girls at certain stages of their learning activity. Schools for so long have been based upon a system of regimentation that teachers lose their grip in a classroom situation which provides opportunity for learning intelligent self-direction and self-control. In far too many school systems a boy or girl going through the halls during class hours is regarded as a spy in a foreign land. Much of this sort of attitude must pass. In the school where maximum social development is the goal, the entire school with all its resources must be available when needed. Children going purposefully from room to room must not be regarded as fugitives from justice. Faith in the power of the child to learn self-control must be achieved before much can be done in the social studies to improve democratic living. The teacher who feels that children cannot learn some self-discipline while children, and continue to learn more as they mature, will be totally barren in the functioning social studies program. Teachers who feel that children cannot

develop desirable attitudes and a good sense of values, are likewise of minimum value.

II. WEAKNESSES IN THE CONVENTIONAL CURRICULUM

At present, the content of the social studies is in a state of flux and varies from school to school and from room to room. Many cling to the traditional type of organization, with geography and history taught as separate and unrelated areas of study. Such compartmentalized grouping of subject matter is hard to defend. The main fault with it is that it tends to emphasize the acquisition of knowledge over every other aim, and assumes that knowing automatically leads to doing. For example, in attempting to develop broad social attitudes on the part of children, the question can be raised whether the factual teaching of history and geography has instilled needed concepts regarding racial and religious differences and real appreciation of democratic customs and ideals.

Examples of Faulty Teaching of Geography. Geography courses have taught children many facts about the products of other lands and other sections of our own country. These facts usually have been considered in an academic way without any emphasis on their significance. For instance, children have learned that the principal products of Argentina are beef and wheat, and those of Brazil mostly rubber, cocoa, and coffee. Children have not been taught that the temperate zone agricultural products of Argentina must compete in world markets with exports of the United States because our climate is much the same as that of Argentina. Nor are they taught that we need Brazil's exports, which are those of the torrid zone, because we cannot produce them efficiently ourselves. On the other hand, Brazil needs our manufactured goods. The two countries are essentially complementary in production rather than competitive. Brazil, therefore, sees herself tied to our economy because she needs the products of our factories while we desire her coffee and rubber. This situation leads to a feeling of mutual friendship and a desire to maintain good relations. Argentina, on the contrary, recognizes that there may not be enough of a world market for all the meat and wheat. Why be friendly and cooperative

with us if she can arrange satisfactory trade relationships with other countries which need her products?

In considering natural resources such as iron ore, coal, oil, tin, and timber, in a geography class, little account has been taken of their importance in the material and technical development of peoples or of the influence they have. England, for example, went through the industrial revolution earlier than most countries because of a good coal supply. The United States owes its rapid growth and prosperity not entirely to its traditional American spirit of innovation and hustle but partly to its unequaled natural resources of fertile soil, iron ore, coal, timber, copper, lead, zinc, and salt. Germany, with meager stocks of the fundamentals that make nations great and prosperous, has always been a robber country, desiring to take from others what she did not have herself. Her modern history has been one of striving for oil supplies, iron ore, coal, and lumber so that she could dominate the world markets for manufactured goods. Children have not been taught that wars come not because of hatred of foreigners but because of the desire to dominate markets and secure supplies of raw materials. World War II, like World War I, was largely precipitated because Germany felt she could not be prosperous or compete adequately without more assured sources of oil, lumber, coal, and iron ore.

Japan, an island empire, has been studied as a producer of silk, tea, fish, and cheap manufactured goods. What has not been taught is that Japan has needed raw materials which were available in China, and regular and assured markets which were also available in China. Japan felt that she must control China or risk having her position as a first-rate nation greatly jeopardized. With China conquered, a logical further conquest would be Indo-China, the Philippines, and India, with their potential sources of cheap manpower and almost unlimited markets. Japan was caught between the horns of a dilemma. Many of her raw materials for manufacturing were costly because they had to be imported. She had to undersell the rest of the world because of the prejudice against slant eyes, yellow skin, different customs, and an outmoded religion. Japan could buy at high prices and sell at low ones only by having exceedingly cheap

labor. She was obliged to adopt the mechanistic and scientific civilization of Western Europe but could not adopt its labor unions, child labor laws, old age pensions, or unemployment insurance because she could not afford to do so. Every slight leaning toward socialism or even toward betterment of the conditions of the common man had to be ruthlessly hammered out on the anvil of patriotism and religion, or else Japan would lose her position as a first-class power. Geography has not taught such interpretations in spite of the fact that even elementary school children can be given some conception of them.

Geography has, furthermore, emphasized the strangeness of foreign customs without teaching that they are natural adaptations to environment and hence not to be regarded as "queer." The African wears few clothes because he lives in a hot climate; polygamy becomes prevalent where there are fewer men than women; the Eskimos eat fat because they must have quick energy in a cold climate. Geography of the past has stressed such differences without encouraging interpretations of the reasons for them.

Natural features have, likewise, been taught with too few interpretations of the effects they have had on the lives of people. Certain mountainous nations have almost always been warlike because they have had to be tough and hard in order to survive and because they could easily rob their soft and complacent neighbors in the lowlands. The Alps have made Switzerland a nation that supplies the needs of tourists. Norwegians, lacking farm land and minerals, have gone down to the sea to earn a livelihood. The Volga has made the dwellers on its banks boatmen-traders. People in the "pine stump" region of Michigan have become caterers to vacationists, depending on three months' business to carry them through the rest of the year with the aid of an occasional day's work on the highways, a little garden, and wild game obtained in the neighborhood.

Much of the same lack of interpretation characterizes the study of cities. New York is huge because of its fine harbor and because it is the gateway to Europe. Naturally it would oppose development of the St. Lawrence waterway which would divert much of the trans-shipment of goods now

unloaded in New York. Chicago became great because Lake Michigan destined it for a railroad center. Pittsburgh, with its proximity to the coal mines of Pennsylvania and its water route to the iron mines of Minnesota, could hardly escape being a steel center. Cities, as a topic in geography, are significant only as one knows why they are cities and what services they render.

Capitals of states and nations have been over-emphasized. In studying Michigan, for instance, Lansing is made to seem more important than Flint and Grand Rapids and almost as important as Detroit. In studying Illinois, the importance of Springfield has been magnified.

Boundaries of states were once given too much attention. A child in Iowa should know, it is true, that New York is east but it can hardly be material to him that New Jersey is south of New York. Nebraska is west to the boy in Indiana, but the fact that it is bordered on the north by South Dakota is less significant to him.

For too long, the study of the social sciences has been concerned with the memorization of isolated facts rather than the interpretation of facts. It has not made children understanding, tolerant, or social-minded. Its position in the curriculum has hardly been justified.

Examples of Faulty Teaching of History. The traditional content of history courses, too, must come in for a great deal of adverse criticism. History has usually been taught not as a study involving interpretation of facts but as a course involving facts as an end in themselves.

The Revolutionary War, for example, has received much attention from textbook writers. Its treatment has largely been in terms of campaigns, battles, and generals. It may be of some cultural value to the child to know about the battles of Lexington and Bunker Hill and the privations of Valley Forge. Most of the battles, though, have little significance for a child; background material is far more important. Children do not understand why most wealthy people of the time were Tories, or that the tyranny of the British Government extended over the people in England as well as over the American colonists. History books omit or fail to emphasize the fact that people of the border areas distrusted the settled

inhabitants along the sea coasts, that there was dislike and even open enmity between farmers and city-dwellers, that the colonists were not agreed on procedures or values.

Moreover, teaching of the Revolutionary War has failed to emphasize its economic background. Pupils should be made aware that British commercial interests wished to stifle a growing rival and preserve markets for themselves, that the Boston Tea Party was only a symptom of underlying unrest, and that the reaction of the colonists was directed against the wealthy classes in their own country as much as it was against British imperialism.

Turning to instruction about another period in American history, it is well known that publishers have not always tried to sell the same textbooks on American history to both northern and southern schools because it was for a long time thought necessary to interpret the economic background of the Civil War from two differing points of view. Impartial examination of facts reveals, however, that both sides have been prejudiced in their views of the causes and conduct of the war. The North was hypocritical when it claimed that its major aim had been to free the slaves for the sake of the black population itself; the real purpose of emancipation was to remove competition with cheap labor. Slavery had ceased north of the Mason and Dixon line not because of a superior moral sensitiveness but simply because it was unprofitable. Again, historians have come to see that the conflict was brought on largely by the old, familiar economic situation of agriculture, as exemplified by the South, wanting low prices for manufactured goods and high prices for farm products while the predominantly industrial North desired low prices for farm products and high prices for manufactured goods. Correct teaching should bring out the fact that, fortunately, manufacturing is no longer confined to the North, so that occupational lines are no longer so tightly drawn and that fortunately, too, transportation has become so rapid and easy that regionalism has largely been supplanted by nationalism.

History has made much capital of political campaigns and changes of administration. It might be better to place less emphasis on these details because there is usually little

worthy of commemoration in politics and, instead, to give more attention to movements of peoples and the development of new areas. Pertinent questions are these: Why does New York have so many Jewish people? Why did the Irish flock to Boston and Chicago? Why has the farm population been constantly drained to the cities? What has become of the open ranges of the western states? Why do New Yorkers think the world ends at the Hudson River? Did the Indians have any justification for opposing the white people?

Formal memorization has played too large a part in history content. Even those teachers who give lip service to the need for stressing large concepts and interpretations have listed memoriter questions on examinations. Some have required the learning of the names of the presidents in order. Others have demanded dates of wars, names of forgotten generals and battles, and credos of minor political groups. Is it important that children remember the exact inclusive dates of the Revolutionary War? They should know, of course, that it came during the eighteenth century and about a century and a half after the first settlement of the country. It is far better that youngsters know more about causes and results of historical movements and about the significant accomplishments of our great men.

American history books, too, have often overstressed the nationalistic point of view. Children should be proud of their country and its heroes, it is true. Is it really necessary, though, that Washington be described as the man who never told a lie? Didn't he have enough good qualities which could be portrayed without playing up a legend of such doubtful validity? The authors do not believe it is necessary to enumerate faults of our public men, unless such faults had a bearing on historical events; but neither is it necessary to attribute godlike virtues to them.

Then there is the tendency of writers of history textbooks for the elementary grades to picture the United States as always benevolent, ever fair, never covetous or greedy, and uniformly right in decisions. Never have we been aggressors! We have never fought except to maintain our honor when it has been attacked! We have ignored such uncomfortable details as the incorrect assumption that led to our rushing

into war with Spain. The Indians always are pictured as the aggressors in wars with them, even though it is well known that many whites shot the men for sport and violated the women. Do we have to teach falsehoods to children? It is true that the elementary grades should not stress the darker events of American history, but at least we can confine our teaching to events which have significance for our present ways of living.

III. CHANGING CONTENT IN THE SOCIAL STUDIES

No area of instruction has received so much attention during the past few years as the social studies. They have been subjected to numerous experiments for revision and reorganization, from a combined course in history and geography to a course in social living that scarcely touches even a fraction of what was once considered the meat of the social studies — history and geography. In some recent books dealing with the elementary school curriculum, the words “history” and “geography” are not even mentioned. As a matter of fact even the phrase “social studies” seems to be losing caste and in some instances is giving way to “social living.”

Many high schools likewise have abandoned familiar concepts of what constitutes the social studies, and there is some evidence in what the colleges call “survey courses in social science” to indicate a trend toward integration of former separated subject matter into a combination of subjects complementing one another and thus providing a wider area of study. Regardless of one’s opinion about these experiments, there definitely is an indication that school authorities have awakened to the fact that mere knowledge is not a guarantee of desirable action and that a mechanistic age which valued learning neglected human relationships and thereby neglected to teach the main functions of citizenship.

During the first years after a worldwide conflict it is difficult to evaluate the changes now taking place. What is true today may not be true tomorrow. War brings hurried change, often poorly considered or determined on questionable authority or as a result of bias. Decisions are too frequently made on the spur of the moment without benefit of medita-

tion and without allowing sufficient time for mulling over a proposed solution. War does not eliminate prejudices that existed previously, nor does the desire to do the best possible thing for all concerned necessarily mean that all previous conditioning and cultural pressures can be suddenly cast aside. It is not surprising, then, to find that, from the standpoint of content, the whole social science scene is more confused than ever. Nevertheless, the semblance of a pattern that fits some of our pre-war thinking is emerging in the colleges, particularly those where armed forces were stationed. This pattern, which seems to be generally accepted by the colleges, is that of an enlarging social science area. So-called "language and area studies" providing a correlation of language, history, geography, and sociology in class periods running much beyond the traditional hour, actually resemble what some high and elementary schools have called "the core program." It is interesting to note that whereas the army training program approached broad area courses, the public schools were, on the contrary, induced to abandon them and to adopt so-called "fundamental" courses. Undoubtedly if the colleges persist in developing "integrated" or "survey" or "consolidated" courses, the trend will shortly be reflected in the public schools. Thus it is possible that many high and elementary school teachers who doubted the wisdom of broad fields of study in the public schools may soon agree to them. Such a coordination between public school and college promises at least a concerted attack on the problems of content.

Perhaps a different analysis may answer the question of the value of broad unit courses. Nothing could be more potent than a war in bringing out the fact that progress in the fields of citizenship and social relationships has not even begun to keep pace with mechanical progress. Machines brought comforts to many people, but they failed to alleviate the misery of the poverty-ridden fringe living in blighted areas in cities, the tenant-farmers, and the rural laborers in certain sections of the country. Racial, religious, and economic prejudices continued in spite of improved transportation and closer contacts among divergent groups. Science in many instances was being used to destroy men



Thanksgiving provides an opportunity for children to be of service to the ill and unfortunate and, incidentally, to become social-minded.
(Courtesy of the East Grand Rapids, Michigan, Public Schools)

instead of being harnessed to provide them with happier and richer living. In spite of the fact that the teaching of citizenship was included in every school in the country, it certainly was not effective. Adults were, and still are, notorious for delinquency in voting, office holding, and any real effort to clean up politics.

During the depression years when it was most obvious that changes should be made if the school were to have a part in such a program, attention was directed to the social studies. Educators generally felt that the school could become an institution for improving behavior. Fascist and Nazi ideology came along and demonstrated a method. It was believed that German youth would sacrifice anything, even life itself, for the principles it had been taught. It was obvious that, to accomplish effective conditioning of this sort for democratic living, education had to be a concern not of the school alone but of the whole social order and, conversely, that the child



Delivering milk in connection with a Swiss unit can be a lot of fun.
(Courtesy of the Ferndale, Michigan, Public Schools)

must have appreciation and understanding of that social order. Thus the idea began and developed that learning takes place not only in the classroom but in the home, the church, the neighborhood, and every nook and cranny where the child comes in contact with his environment. Education came to be thought of not only as a product of books and of precepts stemming from teachers but as a product of the newspaper, the radio, the movies, the sermon, the gang, the club, the neighbors, the streets, and every other contact. In the case of the Germans, all these agencies seem to have succeeded in producing the end desired—a willingness to sacrifice everything of personal value for the supposed advancement of the group.

As a result of the growing recognition of the importance of the total environment in learning, the school has produced new objectives, new content, and new methods. Most of the changes appear to have considerable merit and validity. It is generally agreed that history and geography are no longer

acceptable as piecemeal, isolated offerings. No longer can teachers justifiably emphasize memorization in historical studies. No longer is citizenship teaching recognized as primarily a recital of the duties of the President, the method of electing Senators, and ways in which a bill may originate in Congress. One now finds a broadening in many directions, great variety in content, and great differentiation in teaching. Some teachers, who are not averse to making experiments, have attempted to provide experiences and activities that will result in understanding history, geography, and social conditions on local, state, national, and international levels.

The social studies are becoming, more than ever before, a complete and unified study of people and their environment, how they work, play, relax, govern, and meet the multitudinous other demands of a complex civilization. The content is becoming as broad as life itself and as complex in its approach as is the functioning of government, economics, geography, ideology, and religion.

While it must be admitted that the actual working out of the social studies program has fallen far short of its objectives, some of the new ways of teaching have resulted in much more practical and realistic attitudes and concepts than the former piecemeal style of organization could provide. Educators are really beginning to challenge the idea that broad understandings of society and of civilization can be produced only by reading, lecturing, and quizzing. Seeing and hearing at first hand and practicing what is learned are assuming more and more importance.

IV. AIMS IN THE SOCIAL STUDIES

It may be that aims in the social studies have changed less than methods or organization or content but it can still be said they are vague, poorly stated, and often confused. In the main, there is agreement on what the social studies should eventually accomplish but disagreement on secondary or immediate aims. On the one hand are arrayed the conservatives, who regard these subjects as an area in which the culture of the race and nation can be passed on to coming generations. This is well and good and can be approved by

all. To many of this group, however, historical events become significant as data to be learned rather than data which explain a pattern of life; citizenship is to be achieved incidentally, through a study of the lives of men like Washington and Lincoln and through the motivation afforded by a study of such events as the crossing of the Delaware, the charge at San Juan Hill, and the battle of Gettysburg. There seems, however, to be little evidence that the teaching of history through facts, dates, and biography has succeeded in any large way in promoting good citizenship. The older generation was taught in this fashion and yet adults efficient in everyday living have not shown themselves particularly willing to accept office or even to take an active part in campaigns for good government. Voting records usually show that elected officials are put in office by minorities and that, when significant issues are at stake, it is the minority that prods others to the polls.

Teachers of history in the old school were little troubled about election issues. They held that citizenship was the concern not of the school but of the home, the church, and the community. The school's duty was to furnish knowledge without consideration of how that knowledge would function. This is the view of what might be called the "pure" social historians; they believe that knowledge is the important objective.

In the same way, the study of geography is, to the conservative teacher, concerned with acquiring a knowledge of boundaries of political subdivisions, forms of government, types of peoples, products of all sorts, natural features, cities, and ways of living. Promotion of beliefs in the brotherhood of man, the equality of races, and religious tolerance, and furthering an understanding of cultures are not the job of the "pure" geographer.

In summary, the conservative holds that citizenship, except as it may result incidentally, does not concern the social scientist at all. Nor is he concerned with activities involving contemporary studies of the community, sociological effects, causes of poverty and unemployment, or labor migration. Such knowledge is current and relevant only to immediate needs. The past, obviously, is more important

than the present; every subject of study must be weighed and evaluated by the hand of time because in no other way can values be determined and true worth established.

On the other hand, many teachers of today regard historical and cultural patterns as valuable only when they have leads and implications for functional applications. If the social studies do not instill better cooperation, willingness to serve at personal sacrifice, and a desire to vote and to exercise other duties of citizenship, then they are not accomplishing their full purpose. To the teacher with this idea, knowledge is incidental and a means to an end; specific facts have an important but still secondary value. Accounts of wars, battles, and generals, except as they have direct bearing on the present, are worthless, and so are data about political boundaries, products, physical features, cities, kinds of people, and other customary topics of consideration. To these teachers, experiences in cooperation and the development of tolerance for children of other races, faiths, and customs are supremely important. In this kind of framework, beginnings are made by first studying the home and school, then the community in all phases of government, politics, culture, housing, leisure activities, civic organizations, and other significant factors. After these comes the study of wider areas such as the state, the nation, and other lands.

It should be pointed out that labelling does not always show the pattern underneath. There are those who give lip-service to the new but who stress the old in spite of their avowed approach. Then there are those who testify for the old but practice the new in their classes, allowing and encouraging extreme democracy in organization, and stressing government, for example, as a living, functional affair of the whole community. There are also those who believe in the new but are afraid to attempt it, usually because of the admitted difficulty of evaluating progress. There are those who half-heartedly teach the new because it is the present fashion but who secretly believe in rigid subject-matter requirements and in knowledge as an end in itself. And, finally, there are those who have never taken the trouble really to understand the issue at all and who therefore proceed with whatever the textbook suggests.

In this newer, broader sense, the social sciences have few aims not reflected in the total school program. Lane, for example, in designating this area as "social living" lists the following as objectives:¹

1. The building of good social habits such as responsibility, initiative, self-reliance, honesty.
2. Practice in good group living — an increasing desire and ability to get along peaceably and happily with others.
3. The widening of horizons — an increasing knowledge and appreciation of human life outside our immediate neighborhood and outside the particular era in which we live; an increasing "space-sense" and "time-sense."
4. Growth in ability to learn through experience — the ability to consolidate gains and to profit by mistakes.
5. Increasing knowledge of the subject matter known as the "social studies."
6. Rich experience in dramatic play in the primary grades and dramatization in the upper grades as a means of interpreting the social life of our own and of other times.

The same generalization can be made from a study of the objectives listed in *Fifth Grade Social Studies Teaching Suggestions*, issued by the Des Moines, Iowa, Board of Education in 1937. Breadth is indicated here:

- a. To understand and appreciate his [the child's] role as an individual in the interdependent social, economic, and political groups of which he is a member.
- b. To develop an understanding and appreciation of the foundations that the past has laid for the present.
- c. To understand that humanity is progressing and to foster interest, desire, and ability to participate effectively in promoting this progress.
- d. To build the attitudes of tolerance, respect, sympathy, and good will toward all races, classes, and nations.
- e. To develop an outlook on life which will enable one to consider institutions and customs critically, and to take his place intelligently in a society which will continue to change rapidly.
- f. To achieve an understanding of the complex and highly organized economic structure by which community,

¹ LANE, ROBERT H. *The Teacher in the Modern Elementary School*. Boston: Houghton Mifflin Company, 1941, p. 134.

nation, and world cooperated to make possible the seemingly simple conveniences of modern life.

- g. To realize the essential interrelationship between human life and activity and the natural environment which men seek to utilize more and more adequately for their comfort and convenience.
- h. To combat his own prejudices by developing through much use the ability to collect, evaluate, organize, and use social data effectively to form conclusions. To help him know how his mind works and how he arrives at his decisions, stereotypes, and biases.
- i. To achieve a reasoned faith and pride in American institutions, a knowledge of the processes of their growth, and a recognition that they must continue to be susceptible to further growth and development to meet the needs of a changing interdependent world.

Such objectives are as broad as the objectives of the school itself. This suggests that rather than write objectives for the social studies it is better to check general school objectives for their application to the social studies field. In this connection the statement of aims by the Educational Policies Commission (see above, pp. 11-13) will be most helpful. Many of the objectives listed are those which the social studies area may well attempt to achieve.

V. THE PROGRAM IN OUTLINE

As we have already said, many of the objectives of the social sciences overlap those of the program as a whole. There are specific objectives, however, to which the social studies can contribute most of all. For example, as stated by Rugg, this content would be "[the study of] any modes of living, problems, or trends that deal with the economic-political-social system."¹

Nearly all those concerned with the development of a functional social science program are agreed that the study of the community itself is the base of the entire curriculum. Whether studies proceed out toward an analysis of the geographical factors in life, the historical background of events,

¹ RUGG, HAROLD O. *American Life and the School Curriculum*. Boston: Ginn and Company, 1936, p. 394.

or in other directions, the community itself in terms of its social and economic factors provides the best basis for understanding and interpreting social science problems. Community study must be a continuing study, running throughout all grades and underlying all forays into devious and divergent problems. From this point of view, world understanding is possible only when one has an understanding of the basic community itself; world peace, racial understandings, and broad social interpretations are possible only when there is peace and mutual understanding in the local community.

Psychologically, community study as the base of the social science program is justified. The curriculum program of the child, to be most effective, must be selected from his environment; that is to say, education, and particularly social education, is an interaction between the child and his environment. Beginning with the home, expansion can be provided by reaching out, as the child matures, toward more remote aspects of the environment; all aspects, however, are part of the total social pattern of which the home is the starting point. In this idea the community emerges as the over-all source for socializing experiences. As stated by Kilpatrick:¹

To build adequate character one must engage in social living. . . . We learn the reactions that we live and we learn them as we live them. The cooperative community enterprise gives the young real opportunity at real social living. In actual social settings, social reactions are called for. There is in them chance for youth to live at least many of the more social habits and attitudes that they should build. And we may say, contrariwise, that without such actual social experiencing, our young are learning the inadequate lives that they must live; namely not to think adequately about the social situation nor to feel justly the evils that others suffer nor to act on social thinking. It is dangerously inadequate social education that the privileged young get when they know only their sheltered lives. In all of this we see once more how life and learning are strictly correlated. Our young will learn what they live. It is inevitable.

¹ EVERETT, SAMUEL, and others. *The Community School*. New York: D. Appleton-Century Company, 1938, pp. 15-17.

Whereas many schools use the community either as the base of the program running throughout all grades or as the starting point for the program, it is from here on that great diversity occurs in the selection of units of activity. It may be assumed, however, that there is considerable uniformity in the idea of employing the social studies area as the core of the entire elementary school program. It is with this idea in mind that the following suggestions are made.

The main principle in the selection of units of activity is elasticity. Curriculum experiences must be allowed to develop naturally and to follow the direction of fundamental interests.

Elasticity must not be considered as going "all out" in eliminating preliminary planning. Even though the program must be broad enough to meet individual needs and interests growing out of individual and group activity, it must not be inferred that there are no limitations as to what can be carried on. There are limitations, but still this does not mean that each grade, year after year, shall follow the same selections. Instead, the principle must be recognized that the sequence of study followed by one group of children throughout the elementary grades is not necessarily the identical series that was followed by the children of the grade ahead. The objectives may be the same, but it is likely that current happenings may result in quite different sequences for two groups only one year apart. It is to allow for such possibilities that the plea for elasticity is made.

There are two ways in which guides for directing curriculum development may be utilized without eliminating elasticity. The first is that which establishes key areas for each grade. The assumption on which this method is based is that within these key areas one sub-area of group experience can lead to another and that all sub-areas are related to the overall topic. Such a scheme states the area in terms of broad topics of study. The early Virginia program characterizes these topics as major functions of social life: Grade I, Home and School Life; Grade II, Community Life; Grade III, Adaptation of Life to Environmental Forces of Nature; Grade IV, Adaptation of Life to Advancing Physical Frontiers; Grade V, Effects of Inventions and Discoveries

upon Our Living; Grade VI, Effects of Machine Production upon Our Living.¹

This kind of framework definitely places emphasis on those study activities which have had a bearing on facing and solving social problems. Although it is restrictive in the sense of limiting the over-all scope of activity, sufficient activity can be allowed through following individual interests and experiences of children as they explore these areas.

The second way in which guides may be established is one that demands intelligent, efficient, and constructive leadership. This plan begins without definite over-all "themes." Building naturally from year to year, one large area of experience leading naturally to another, the teacher must be not only resourceful but keenly aware of children's needs and current significant happenings.

The lack of a superimposed integrating theme does not necessarily lead to confusion if all possible opportunities for recording unit activity, for appraising results, and for co-operative planning are utilized. And further, this type of approach works out best when teachers progress through several grades with the children. Opponents of this plan may suggest that a failure to provide large area topics as guides for developing experiences implies a lack of knowledge of what to provide. On the other hand, this approach may be utilized only on an experimental basis, eventually leading to prescribed general themes.

VI. IN CONCLUSION

In utilizing community resources as the starting point for developing learning experiences, the school is at the outset making learning practical. In view of the fact that schools have attempted to educate children in isolation, it is no wonder that businessmen and laymen have found fault with the product. Business education, vocational education, and all aspects of special training services will benefit from contact with community life.

The small child, the child at the elementary school level, is going to profit more because what he learns will be found

¹ *Tentative Course of Study for Virginia Elementary Schools*. Richmond, Va.: State Board of Education, 1934.

within the environment in which he lives. Through the experiences in which he participates the school will be seen as a part of the community. Thus the idea is carried into practice that learning represents the result of the reaction between the individual and his environment and is thereby representative of something far greater than a mere definition or an ideal to be sought.

Education that seeks a continuing reconstruction of the total social and individual experience through purposeful activity cannot ignore the activities and phases of learning that assume major importance in conditioning the child in a broad non-academic sense. According to this theory the form and sequence of educational activities are those which best adapt the individual as an organism responding to his environment. If education is to be based upon pupil needs — growth deficiencies or potentialities brought about within an environment — education must do two things: direct growth where growth is satisfactory or potentially existent, and improve the “soil,” the environment, where growth is weak or the potentials for growth are lacking. In other words, improvement of environment is one of the factors in the teaching process and equally important to that activity of directing growth where environmental conditions are satisfactory.

What is a more natural good teaching device than guiding the child in relation to the environment of which he is a product? And to guide there must be activity. As a matter of fact there always is activity. Regardless of the activity of the school, the child reacts to his environment. If the school works in isolation apart from the life which the child really lives, direction of the learning activity becomes meaningless. Thus the school must consider the child from the point of view of his general pattern. Utilization of community resources is helpful and tends to develop learning experiences in relation to life as the child lives it.

SELECTED REFERENCES

1. BRANOM, F. K. *The Teaching of the Social Studies in a Changing World*. New York: W. H. Sadlier, Inc., 1942.

2. COMMISSION ON SECONDARY SCHOOL CURRICULUM OF THE PROGRESSIVE EDUCATION ASSOCIATION. *The Social Studies in General Education*. New York: D. Appleton-Century Company, 1940.
3. EVERETT, SAMUEL, and others. *The Community School*. New York: D. Appleton-Century Company, 1938.
4. HOCKETT, JOHN A., and JACOBSEN, E. W. *Modern Practices in the Elementary School*. Boston: Ginn and Company, 1938.
5. KELTY, MARY G. *Learning and Teaching History in the Middle Grades*. Boston: Ginn and Company, 1936.
6. KREY, A. C. *A Regional Program for the Social Studies*. New York: The Macmillan Company, 1938.
7. LACEY, JOY M. *Teaching the Social Studies in the Elementary School*. Minneapolis, Minn.: Burgess Publishing Company, 1941.
8. LANE, ROBERT H. *The Teacher in the Modern Elementary School*. Boston: Houghton Mifflin Company, 1941.
9. LEE, J. MURRAY, and LEE, DORRIS MAY. *The Child and His Curriculum*. New York: D. Appleton-Century Company, 1940.
10. MACOMBER, F. G. *Guiding Child Development in the Elementary School*. New York: American Book Company, 1941.
11. REED, MARY M., and WRIGHT, LULA E. *The Beginnings of the Social Sciences*. New York: Charles Scribner's Sons, 1932.
12. WASHBURN, CARLETON. *A Living Philosophy of Education*. New York: The John Day Company, 1940.
13. WESLEY, EDGAR BRUCE. *Teaching the Social Studies*. Second Edition. Boston: D. C. Heath and Company, 1942.
14. —, and ADAMS, MARY A. *Teaching Social Studies in Elementary Schools*. Boston: D. C. Heath and Company, 1946.

The Sciences in the Curriculum:

Natural Science

I. THE NEED FOR SCIENCE STUDY

THE WAR has revealed the need for science study as well as for mathematics in the schools. Until recent times, "nature study," taught very incidentally, was the only science in the elementary school curriculum. Some teachers did much excellent work, developing in many instances an intense and lasting love for nature and, in other instances, science concepts that have lasted through life and interest that has led to permanent avocational pursuits.

The principal criticism of such teaching has been that it lacks breadth of content; it includes little more than flowers, plants, birds, and animals. Granted that love for and understanding of nature is of utmost importance for the enjoyment and enrichment of life, nature study frequently fails to touch many areas in which children have vital latent interests and needs. If one was never convinced before, the war has certainly emphasized the need for a study of the sun, the moon, the common constellations; physical geography in relation to formation, function, and description of natural features; geology with its study of common rocks, coal fields, oil, salt, and mineral deposits; chemistry, as it reveals the environment; and physics with its study of the sources of energy and the applications of mechanics, electricity, magnetism, sound, and light. Off-shoots of these in which the war has intensified interest are the radio, photography, meteorology, motion pictures, television, and aviation.

The old conception of science is too narrow to prepare children for the post-war world which is, above all, a scien-

tific world. Recent discoveries have changed our way of living from one based on candles, horses, and buggies to one based on electric lights, automobiles, airplanes, and many household conveniences. Children are well aware of this change.

II. CHILDREN'S INTERESTS IN SCIENCE

Very few subject areas have the appeal of science when it is properly experienced. Among nature study topics, Curtis¹ reports that rural children are most interested in spring birds, land insects, spring flowers, pests, water birds, winter mammals, autumn woody plants, and cultivated plants. His study also points out that the kind of information desired relates to habits, taxonomy, physiology, morphology, economy, definition, pedagogy, ecology, and distribution. Habits of animals and birds represent nearly a third of the questions recorded.

In the broader field of science Craig reports such interests as the following:² birds, stars, sun, water, moon, flowers, earth, people, trees, world, electricity, air, animals, clouds, Mars, sky, mountains, glass, color, lightning, plants, day, time, men, rocks, radio, night, and a long list of other topics. To indicate the breadth of children's interests, Craig lists the following as some of the most challenging:

1. The composition and importance of the atmosphere.
2. Vital processes of plants and animals.
3. Distinction between stars and planets.
4. Relation between survival and adaptation of animals to their environment.
5. The production, manifestation, and properties of electricity.
6. Life habits of common animals.
7. Life history of plants and animals.
8. Knowledge that every substance is either (a) an element, (b) a chemical compound, or (c) a mechanical mixture.

¹ CURTIS, F. D. *A Digest of the Investigations in the Teaching of Science in the Elementary and Secondary Schools*. Philadelphia: The Blakiston Company, 1925, Vol. I, p. 204.

² CRAIG, GERALD S. *Certain Techniques Used in Developing a Course of Study in Science for the Horace Mann Elementary School* (Teachers College Contributions to Education, No. 276). New York: Bureau of Publications, Teachers College, Columbia University, 1927, p. 30.

9. The physical properties of matter.
10. Weather as a manifestation of cause and effect.
11. The scientific hypothesis regarding the earth.
12. Scientific appliances.
13. The forces determining the present appearance of the earth's surface.

Children's interests cannot be considered as springing solely from intellectual curiosity. Many of them are related to the physiological development of the child. Interests parallel general development, and change according to the stage of maturity.

Not all interests can be translated into activity, for some are quite beyond the exploratory powers of the child. Einstein's theory of relativity, for example, may arouse the curiosity of some children but is far beyond their understanding. Television can be explored in only its simplest phases. Electricity and light, as studied in the elementary school, can be experimented with only in terms of simple practical effects. Children may be taught, however, that a whole lifetime may be spent in fully exploring very small areas of study. Teaching certainly should be concerned with developing broad understandings which will help the individual to function more effectively and understandingly as a citizen, a home-maker, and a community member.

When is an interest valid and worthy of pursuit? Slavson and Speer have answered this question.¹ According to them, the external symptoms of a valid interest are:

1. The pupil's more or less eager response to the learning and activity area.
2. The enthusiasm with which he undertakes the activity and learning.
3. An aggressive approach as contrasted with passive receptivity.
4. The direction of concentration.
5. Resistance to termination of the learning area.
6. A progressive development in learning with a minimum of teacher-stimulation and a maximum of pupil-function.

¹ SLAVSON, S. R., and SPEER, R. K. *Science in the New Education*. New York: Prentice-Hall, Inc., 1936, p. 35.



A fourth-grade group takes a trip to the lake for specimens of pond life.
(Courtesy of the East Grand Rapids, Michigan, Public Schools)

The existence of a spontaneous interest is not necessarily a criterion of whether that interest should be followed by a unit of study. Frequently interests are a matter of background and experience, and sometimes the result of parental indulgence. Enlightened education seeks to convert the pleasure motivations of the child into a capacity to meet and to control reality; its main function is not to gratify the child's desire to magnify his ego. The true criterion of the validity of an interest is its ability to satisfy the needs of the learner in such a way as to contribute to his intellectual growth and character development as well as to his emotional maturity.

In general it might be said that it is unnecessary to develop interests since these are already potentially existent. The child is an organism reacting to his environment; the school needs only to direct attention to this environment or to bring the child into more understanding contact with it. In certain science areas, however, children's contacts are so indirect as to be almost nonexistent. Many, for example, have

never heard of the gyroscope, and hence do not know whether or not they are interested. The function of the teacher is to acquaint and to orient. If interest is not aroused in a topic which the teacher thinks will meet an important need or potential interest, then the motivation is faulty or else the topic is poorly conceived in terms of pupil background, needs, and interests. Science cannot be limited to those areas that the child can discover entirely for himself. It must include areas which the teacher can lead him to discover. The teacher is thus not merely a guide and an adviser in a passive sense but also an originator and a motivator.

Many science textbook writers have not succeeded in relating their materials to children's interests. Pollock found that only 43 per cent of twenty-five hundred questions obtained from children were related to content of the textbooks studied.¹

Certainly if textbooks were related to children's interests, there would be no occasion for the remark of Hillman:² "There is . . . no general agreement as to the topics which make up the science of the elementary school." Another study of about the same period concluded that there is little agreement either on materials or on methods of teaching.³ Recent years have done little to close the gap, although much has been accomplished in the way of supplementary reading to relate interest and content.

III. OBJECTIVES IN SCIENCE TEACHING

The *Thirty-First Year Book of the National Society for the Study of Education* set forth a plan for organizing the materials of science instruction around a group of basic concepts or understandings derived from the writings of scientists.⁴

¹ POLLOCK, C. A. "Children's Interest as a Basis for What to Teach in General Science." *Educational Research Bulletin*. III: 3 ff. Jan. 9, 1924.

² HILLMAN, J. E. *Some Aspects of Science in the Elementary School* (George Peabody Contributions to Education, No. 4). Nashville, Tenn.: George Peabody College, 1924, p. 27.

³ BAGLEY, WILLIAM C., and KYTE, GEORGE C. *The California Curriculum Study*. Berkeley, Calif.: University of California Press, 1926, pp. 203-233.

⁴ "A Program for Science Teaching." In *Thirty-First Year Book of the National Society for the Study of Education*. Bloomington, Ill.: Public School Publishing Company, 1932, Part I.

This scheme of organization for science content was a distinct contribution to the field but had the limitation of viewing science instruction from the angle of pure science without much concern for the value of science as it may help the individual to interpret and adjust to the problems of modern life.

Such concepts as the following were proposed:

1. Space is vast.
2. The earth is very old as measured in modern units of time.
3. Life has developed from simpler forms.
4. The sun is a source of energy.
5. There are ninety-two elements.
6. Light is indispensable to life.

When the above concepts are developed incidentally or as generalizations from experience, they become valuable. When they become major objectives, then the end achieved is mere subject matter without implications for behavior. Modern education, with its national and international implications, is not primarily interested in this kind of outcome. It is searching for ways to arrive at generalizations which will aid individual and group effort in adjusting to broad problems and situations. This means that the science principles learned are to be applied in social-economic settings as well as in the mere job of living more adequately in a narrower sphere.

In this broader concept of the function of the study of science, the following objectives can be agreed upon:

1. To satisfy the child's curiosity about natural phenomena
2. To help the child understand the present industrial civilization
3. To help the child understand the relationship of science to health, safety, and conservation
4. To help the child understand the relationship of science to social changes and social attitudes
5. To help the child understand that science gives control of the environment
6. To help the child develop scientific attitudes

Some of these objectives require elaboration. Others are quite clear. The first objective, for example, needs little

explanation; the point has already been made that children are potentially interested in all kinds of scientific phenomena and that a consideration of a wide variety of topics during the period of rapid growth of the child will do much to satisfy natural curiosity and interests.

In exploring the second objective, "To help the child understand the present industrial civilization," science must be correlated with the social studies. Science and social science become one when such topics as production and machinery, transportation and its social implications, communication, and the like are studied. The preservation of foods, the use of machines in making clothes, and other topics further illustrate this point. Thus the objectives of the social studies and of the natural sciences frequently become parallel if not completely merged.

When science is studied as a means for more healthful living, again there is a merging of two subject-matter fields frequently taught separately. This objective indicates that much of health education is to be taught in a new field and, further, that science should give consideration to improvement of body efficiency, physical fitness, and general health through all elementary grades. Attention should be given to such matters as the effect of alcohol and narcotics upon general health, the need for prescribed medicine, the ineffectiveness of patent medicines, and the effects of antiseptics and disinfectants. Proper facilities and teacher preparation make possible in the upper elementary grades an analysis of tooth pastes and powders for pumice, ground meats for preservatives, and patent medicines for content. Science work organized for individual and group attack on such problems is fascinating to children. The belief of sun worshippers regarding the desirable effects of sunlight on the skin, the function and misuse of laxatives, treatment of cuts and bruises are still other possible topics of study related to both science and health.

The relation of science to the social studies has already been mentioned. The effect of technology on social evolution is a problem both of science and of the social studies. Others are centralization of industry and the causes of concentration of populations.

Science as a means of environmental control is a worthy and perhaps key objective, which could dominate the whole science program if allowed full opportunity for exploration. It must, however, be controlled and related to its broader social implications.

The hope for a better world rests upon the extent to which science can replace bigotry, superstition, ignorance, and prejudice. In attaining this objective the teaching of science can play an important part.

IV. CONTENT OF SCIENCE STUDY

A standardized course of study rigidly followed is ineffective in contributing to children's needs and interests. Interests develop at unexpected times and in unforeseen directions. To fail to satisfy these while they are urgent and vital would be to violate the relationship between need and maturity which is basic in curriculum selection. The following incident is characteristic of what happens when a course of study sequence is rigidly followed: A certain child came running to his teacher with a frog. "Look what I found, Miss Brown. He was hopping along in our back yard. I know that it is a frog, but I don't know where it has been all winter or what it eats. Where do you suppose it is going? Does it have blood like dogs and cats? Is the pollywog a little frog? Can't we study about the frog in science class today?" To these queries the teacher courteously but firmly replied, "We haven't time to study about the frog today because our lesson as assigned in the course of study is concerned with earthworms. You will learn about the frog next year when you are in the sixth grade!"

It is to be hoped that incidents like this are rare, but undoubtedly they happen all too often. Used in this way, a course of study becomes a handicap rather than the facilitating device it should be. Probably it should be added that in most instances curriculum makers have not intended courses of study to be followed so rigidly. Misunderstanding or inefficiency on the part of teachers rather than administrative requirements has usually been the cause of such short-sighted teaching.

A course of study in science can be highly valuable if developed in source units rather than in required sequences. Used to provide suggestions for locating information, equipment, and supplies, and as a guide to help in stimulating the interests and needs that children are likely to have at a certain age, the source unit can make definite and valuable contributions to teaching. It can also assist in preventing purposeless and wasteful repetition which would arise if the same activities were studied year after year. The teacher has a responsibility for guiding children in acquiring a broad base of knowledge about science rather than a narrow, highly specialized knowledge about a few areas of the field. The elementary school is certainly no place to develop science specialists.

With another warning against use of any curriculum except as it meets present interests and needs of children, and with the further recommendation that whatever is listed in the curriculum should be regarded merely as source material to be used whenever it is of value anywhere in the elementary school, the following general grade placement of topics is suggested as being representative of common interests and needs of children at various ages. For more detailed lists the reader is referred to the excellent compilations by Craig¹ and Croxton.²

Kindergarten: Activities in connection with dogs, cats, goldfish, rabbits, parrots, canaries, etc. All activities entirely incidental.

Grade One: Autumnal activities of birds, squirrels, and chipmunks. What becomes of snakes, frogs, toads, ants, and butterflies in winter? Feeding of birds in winter. Tracks of animals in the snow. Care of butterflies in spring. Study of growth of grass, unfolding of leaves, and unfolding of flowers.

Grade Two: Study of earthworms and turtles in a terrarium. Dissection of deserted birds' nests. Consideration of habits, food, and usefulness of birds, earthworms, and pets. Feeding and care of pets, with more detail than in kinder-

¹ CRAIG, G. S. *Science for the Elementary School Teacher*. Boston: Ginn and Company, 1940, p. 519.

² CROXTON, W. C. *Science in the Elementary School*. New York: McGraw-Hill Book Company, 1937, p. 125.

garten. Sun and stars; simple and common constellations. Water, ice, snow, common stones, the moon, gravity, common trees, common fish.

Grade Three: Homes made by common insects such as ants, hornets, wasps, and bees. Habits of these insects. Observation of some of them on field trips and in the classroom. Study of usefulness of common insects to man. Consideration of singing insects such as cicadas, katydids, crickets, and grasshoppers. Uses of the sun. Extinct birds and animals. The air.

Grade Four: Honey bees, rodents, opossums, and raccoons. Study of habits of the bee, including swarming, making and storage of honey, travels, community life, and life cycle. Physical characteristics such as numerous eyes, wings, feet, antennae, and head. How nectar is changed to honey. Care of bees and usefulness to man. Consideration of habits, appearance, and characteristics of squirrels, beavers, muskrats, woodchucks, chipmunks, and rabbits. The compass, simple electricity, electric cells, simple electrical circuits, time belts, causes of day and night.

Grade Five: Study of tadpoles, frogs, dragon flies, snails, turtles, crayfish, clams, and minnows in respect to appearance, habits, and usefulness. Identification and characteristics of common trees. Consideration of habits, appearance, and life functions of common snakes, spiders, and mollusks. Field trips. Use of an aquarium. Solar system, more advanced electricity, illuminating gas, electricity as used for heat and light, fire prevention, colors, uses of light, comets, eclipses, germs, soils, simple sound, plants and their food, solids, liquids, gases, limestone caves, elements, compounds, and mixtures, ocean of air, air pressure, compressed air, gases in the air, air and health, wind, airplanes, the solar system, butterflies and moths, erosion, conservation of forest minerals and wild life.

Grade Six: Identification of common birds, habits, food, usefulness, migration, nesting, enemies, etc. Our changing earth, volcanoes, mountain formation, rocks changed to soil, minerals, beginning of life on the earth, coal age, age of fishes, age of reptiles, rise of modern plants, first warm-blooded animals, ice ages, age of mammals, metals, uses of power, generation of electricity, the telegraph, the telephone, television,

steam power, gasoline power, electrical power, food as a generator of power in the human body, stamping out disease, how sound travels, water supply, muscles and health, galaxies of stars.

V. TEACHING METHODS

Little evidence has been gathered to date regarding teaching methods that should be used in elementary science. Instructional procedure that functions well in other fields will probably be equally effective in science. Although demonstration techniques have been found fully as effective as individual laboratory work in the secondary school, all elementary science specialists feel that younger children should be allowed to handle and operate equipment, specimens, and materials as much as possible. There seems little reason to doubt that science becomes a much more real and vital experience for them if they can take an active part in experimentation, exhibiting, and other work. Most experiments, after all, involve simple equipment that can be handled by children. Care must be taken, of course, to prevent their handling any equipment or materials which might cause physical injury.

In a field as broad as science, individual possibilities are practically limitless. Moreover, intensive interests are so wide and so numerous that they may be motivated with a minimum amount of effort by the teacher. Lack of vision on the part of the teacher is probably the principal obstacle to effective individualization in science. The teacher, often untrained and without resources, material or mental, does not see what can be done in this area and hence tries to stick to a stereotyped program or follows none at all.

Probably it is wise to present only a brief list of areas in which children often have very deep interests and which they will wish to pursue if given encouragement. Those areas are radio, television, movies, photography, botany, zoology, astronomy, chemistry, and physical geography. Within these areas, there are countless projects which can be used.

The teacher, of course, may know little about the areas in which the older children are carrying out an individual project, and in fact she will frequently know considerably less.

This does not need to worry her as her role is that of motivating, giving encouragement, and assisting in finding materials. She should use all the resources of the members of the group who have special knowledges and skills in giving assistance to other pupils who are less experienced or skilled. When she is regarded as a guide and counselor, it does not matter if certain pupils have skills and experience beyond her own.

A number of elementary schools organized in the platoon system have a special science room and a special teacher of science. The general trend toward unification of subject matter within broad unit areas has puzzled some teachers and administrators who have such special facilities. Rather than close the room and dismiss the teacher, certain schools have developed the consultant or on-call scheme of utilizing teachers with special training. The advantages of this plan will be explained fully in the next chapter; the purpose here is to mention that these staff members can be used to far greater advantage than can be realized in the platoon system.

Briefly, the science teacher is utilized in the regular classroom where science is involved in the large area activity. Such use does not take the full time of this specialist and consequently she is available for individual or group activity in science in the special room where equipment and facilities are available beyond that demanded by the science work in the unit activity. Such work in the room is developed on an interest basis rather than on a course of study minimum program.

VI. ORGANIZATION

The question of whether or not to have a definite period for science will be settled according to the type of organization of the school and its general methods of teaching. If the broad core program is used, with all instruction grouped around projects or centers of interest, science will have no difficulty in filling its rightful place. If elementary teachers are interested in and equipped for the teaching of science, nearly any activity carried on by a group of children will almost inevitably bring in a great deal of science. Fundamental interests in science are inherent in all individuals, young and

old. All that is needed is teacher alertness and stimulation.

If the school is organized so that subjects such as arithmetic, social studies, art, and music are assigned definite time allotments, then certainly science should also be given a definite place in the curriculum. It could hardly receive much attention if taught incidentally when other subjects have a more definite place. Probably a definite place would be necessary in this case for planning and for unification of effort if for no other reason.

Science should not have and does not need as much time as the background subjects. A daily period would be likely to dull interest rather than stimulate it because most elementary teachers are not equipped for much science instruction. Two or three periods a week represent about the average amount of time devoted to science in large city schools. Smaller cities, small towns, and rural areas very often have no regular work in science. The determining factor seems to be the interest and training of the teacher. In some relatively small population areas, one finds isolated instances of excellent work but these seem to be the exception rather than the rule.

The science period, where used, should be from forty to sixty minutes long, except in the primary grades. It is impossible to do experiments or carry out any sort of effective instruction with any shorter period. A fairly long time allotment, only once or twice a week, is much better than more frequent shorter periods. Wherever possible, however, the plan of relating science to broad areas of study is the most adequate.

VII. EQUIPMENT

Elementary science experiments are performed largely with exceedingly simple equipment. Materials are mostly secured from the environment, with equipment from five-and-ten-cent stores, the home, and occasionally the drug-store.

Perhaps more elaborate supplies would be advisable although this would seem to be open to considerable doubt. As has been stated repeatedly, the content aim in elementary science is to give a broad understanding of the natural forces



Science experiments can be performed with very simple equipment.
(Courtesy of the Battle Creek, Michigan, Public Schools)

in the environment, of the contributions of the machine to modern civilization, of how comforts and luxuries have come from the discoveries of science, of the social effects of a mechanized world, and of the utilization on a simple level of those scientific discoveries which mean so much in daily living. In the light of the objectives mentioned, it is quite obvious that elaborate equipment and multitudinous supplies not only would be unnecessary but would tend to call forth a type of experimentation far removed from the simple applications of science which children can make in their own environment. It is much better to have them understand that practical science is being applied constantly in the home, the neighborhood, the store, and the office, whereas the science laboratory with its expensive equipment is the place principally concerned with discoveries and new applications. Since whatever experimentation and application the children do by themselves have to be done with simple, inexpensive equipment, it follows that they should use in school as far as possible the

same type of resources they are likely to be able to secure for themselves in their environment.

It is really surprising how much can be done with simple equipment and meager supplies. One can test various types of foods for proteins and acids. Dentifrices can be checked for the presence of abrasives. Soaps can be tested for the presence of free alkalies. Efficiencies of different brands of vinegar and household ammonia can be compared. Preservatives in meats can be detected. Tin-can telephone and telegraph sets can be constructed. Faucets can be made to stop leaking by replacing worn gaskets. Electric, gas, and water meters can be read and bills checked. Temperature, rain, and snow can be measured, and atmospheric readings and relative humidity can be determined. Time can be told by sundials and water clocks. Surveying can be done, as the pioneers did it, by using a pan of water for a level and a compass instead of a transit. These are only a few of the simple applications to daily life which can be made by a resourceful child who has been stimulated and assisted by a resourceful teacher in the use of the things that are available to all.

VIII. IN CONCLUSION

In the main, science is one of those areas that can make a double contribution to the development of the child.

It contributes to his social development through integration within the broad area study. In the unit activity or the broad core base, all children meet as a representative social unit. Selection of curriculum experiences finds its ultimate guide in the needs of the group. The processes of cooperative planning, group activity, and collective appraisal, all emphasize group needs. Children with wide ranges of ability and achievement learn to appreciate the contributions of each other and of the collective efforts of the entire group.

Science makes its contribution to individual development through its ability to adjust to individual interests. These may be of two kinds: those that are motivated by the unit activity and those that result from individual backgrounds and experiences having no relation to the unit or main theme. The school must minister to both types, and science is one

of several fields that can be effectively utilized for this purpose. Developing an individual interest frequently develops an ability, and confidence in that ability leads to satisfaction, poise, and stability. Science, when so utilized, minimizes competition so that the child has opportunity to learn the value of purpose, planning, hard work, and a personal standard of achievement frequently much higher than that of the teacher. With careful guidance and direction such achievement becomes the rule rather than the exception.

Through ministering to individual differences not by qualitative or quantitative assignments but by recognition of differences in the needs and skills of children, real creativeness and understanding receive their greatest possible encouragement.

SELECTED REFERENCES

1. BAGLEY, W. C., and KYTE, G. C. *The California Curriculum Study*. Berkeley, Calif.: University of California Press, 1926.
2. COMMISSION ON SECONDARY SCHOOL CURRICULUM OF THE PROGRESSIVE EDUCATION ASSOCIATION. *Science in General Education*. New York: D. Appleton-Century Company, 1938.
3. CRAIG, GERALD S. *Science for the Elementary School Teacher*. Boston: Ginn and Company, 1940.
4. CROXTON, W. C. *Science in the Elementary School: Including an Activity Program*. New York: McGraw-Hill Book Company, 1937.
5. CURTIS, F. D. *Third Digest of Investigations in the Teaching of Science*. Philadelphia: The Blakiston Company, 1939.
6. DOWNING, ELLIOT R. *An Introduction to the Teaching of Science*. Chicago: University of Chicago Press, 1935.
7. HEISS, ELWOOD D., OBOURN, ELLSWORTH S., and HOFFMAN, C. WESLEY. *Modern Methods and Materials for Teaching Science*. New York: The Macmillan Company, 1940.
8. HUNTER, GEORGE W. *Science Teaching at Junior and Senior High School Levels*. New York: American Book Company, 1934.
9. MILLER, DAVID F., and BLAYDES, GLENN W. *Methods and Materials for Teaching Biological Sciences*. New York: McGraw-Hill Book Company, 1938.
10. NOLL, VICTOR H. *The Teaching of Science in Elementary and Secondary Schools*. New York: Longmans, Green and Company, 1939.
11. REED, H. B. *Psychology of Elementary School Subjects*. Boston: Ginn and Company, 1927.

12. SLAVSON, S. R., and SPEER, ROBERT K. *Science in the New Education*. New York: Prentice-Hall, Inc., 1936.
13. THAYER, V. T. *Science in General Education*. New York: D. Appleton-Century Company, 1938.
14. *Thirty-First Year Book of the National Society for the Study of Education*. "A Program for Teaching Science." Bloomington, Ill.: Public School Publishing Company, 1932.
15. *Thirty-Sixth Year Book of the National Society for the Study of Education*. Bloomington, Ill.: Public School Publishing Company, 1937.

II

Arts and Crafts

I. OBJECTIVES IN ARTS AND CRAFTS

THE CURRENT rather extensive use of arts and crafts materials in the elementary school is a substantial verification of the idea that instruction is progressing farther and farther from its original read-recite-test pattern. Typical of earlier days, for example, was the instruction activity concerned with a study of the Pilgrims, which usually took place a day or so before Thanksgiving. The only activity required was that involved in reading a well-known account of an incident connected with the holiday. A popular one was the story of the feast given by the Indians for the Pilgrims. Today, such a study is greatly broadened and tied in with a larger unit activity with some such title as "Differences in Frontier and in Modern Living" or "Our National Heritage," and in addition it involves dramatics, the use of arts and crafts, and imaginative and original writing.

Educational research has shown the greater values to be gained from the study of broad unit areas in contrast to piecemeal mastery of "essential" facts. Classroom organization follows such leads and is entirely in accord with our conclusions regarding the best methods of learning. Children now go much further than reading about, discussing, and reporting the ways frontiersmen protected themselves, their relations with the red men, and similar topics. They dramatize, they use sand tables, they make pictures of the epics of frontier life. They construct stockades, model forts, and typical weapons so that they relive to a considerable extent the experiences of their forbears.

Such extensions of instructional activity emphasize the fact that we now believe in handwork and in creative activity

as essential elements in the educative process. We believe that real appreciation results from instruction supplemented by the dramatization of historic episodes and by the necessary research and the handwork involved. We also consider that appreciation results from exploring the full potentialities of writing a play. To an adult many of these activities may appear superficial and badly conceived, but to the child they are dynamic and real and, therefore, educative in their effect. As a result arts, crafts, creative dramatization, music, dancing, and functional handwork have opportunities far beyond those afforded by special classes in these subjects.

In the modern classroom there are four main objectives which may be realized through the use of arts and crafts activity. Stated briefly these are:

1. To facilitate the learning of basic fundamental skills.
2. To develop maximum manipulative growth on the part of children.
3. To provide a means for creative expression for all children at all stages of maturity in all cultural areas.
4. To provide the means for integrating activities which broaden the scope and relate the interests of the children involved.

TO FACILITATE LEARNING OF FUNDAMENTAL SKILLS. To a considerable degree the materials used in arts and crafts work can be so correlated with regular classroom instruction as to greatly facilitate the learning of fundamental skill subjects. Dramatization, mural work, creative writing, all have their place in an integrated program of study. Such activities not only provide means for motivating learning in other fields but they also provide means for adjusting learning situations to individual differences.

TO DEVELOP MANIPULATIVE GROWTH. Until a child is about eight years of age, his large muscles govern most of his physical movement. After this early period of development, accessory muscles assume increasing importance. Instruction in arts and crafts at this stage is most important, for physiologically the child grows at a rapid rate and growth thereby is most impressionistic. Activities featuring rhythms

are essential at this time to bring about maximum coordination of movement. Dancing is important as well as certain art activities. Drawing should be done by broad sweeping movements, large and unrestrained in order to encourage large muscle control and development. Coordination of movement through the use of the auxiliary muscles is not realized until some time later. Children in the primary grades should not be given activities which call for narrow enforced tracing or coloring because these activities are detrimental to achieving freedom of movement.

Although boys, and girls too, love to pound and to nail, it is questionable whether much material of this nature should be made available in the kindergarten and in grades one and two. Although the Association for Childhood Education recommends hammers and nails, braces and bits, and simple saws for kindergarten and grades one and two, their use should probably be limited to very simple operations. Under no circumstances should construction of detailed carpentry projects be attempted at these grade levels.

Art equipment and supplies should dominate in the primary grades. Easels, paint brushes, chalk, crayons, plastic clay, and clay which may be burned and glazed if desired, should be found in these grades for use in developing manipulative objectives as well as for creative possibilities. Manila and construction paper of assorted sizes, a roll of unprinted newspaper or wrapping paper, tag board, and other kinds of paper should likewise be available as essential equipment. At these grade levels, art expression becomes a method for experiencing primitive forms of recording and for sharing emotions and appreciations. Diversity of materials is therefore essential, for they represent the means by which these goals may be realized.

TO DEVELOP CREATIVE EXPRESSION. It is reasonable to believe that all normal children, in varying degrees and with greatly divergent interests and aptitudes, possess impulses to create. In its fundamental sense, to create implies nothing more than to endow with meaning. It is a fact that genuine worthwhile responses will emerge in abundance when encouragement is given, as the child progresses through school, by providing him with emotionalizing experiences and by

continuously challenging his imagination. Without an adequate reserve of facilities the teacher is greatly handicapped. Without proper perspective and understanding the situation is hopeless. Although the belief is difficult to substantiate, many educators hold that only through broad emotionalizing and cultural experimentation can the child attain the attitudes and values so essential for true enrichment of living.

People who have realized such values in their own lives believe that the individual who lacks this kind of personal maturity is indeed stunted because he lacks the dominating essential motivation for breadth in living. All children have the right to an enriched environment and the right to be helped to exercise to the fullest extent their whole power of expression so that every avenue into complete living remains open. Not every child can become an artist! But every normal child has in him the potentialities requisite for artistic living in some life area.

Each individual possesses to some degree the ability to fashion from the materials of his environment some form of expression individualized in accord with his personal potentialities. This viewpoint makes it possible for many children to realize the same objectives with varying degrees of skill. As potentialities for divergent performances vary, so do choices of fields of expression. It is impossible to foresee what a given child's area of choice will be. Some children truly find themselves in literature and will subsequently express themselves through creative writing. Others find satisfaction in rhythmic expression with line and color or in recordings of ideas on wood, paper, canvas, glass, or fabrics of various kinds. Expression through manipulation may appeal to other children, and for them clay or wood in its various forms will become a medium. Other children find the key through expression in music. In order to succeed in the job of releasing inner satisfactions in the child's dominant interest or interests, the school must offer diversified opportunity.

Most developments in conventional art teaching have been given a vocational or disciplinary emphasis. As a result of complete teacher domination in selection, creation, and

evaluation, the products of such teaching have followed a defined pattern. Imagination has been quenched and evaluation results in terms of teachers' standards. For example, in working with wood — and what boy is not interested in working with wood from the time when he walks into the shop or studio and the fine pungent odor first greets him — creative activity is the exception. And why? Because the purpose has been to produce, not to create.

Another attitude is universal in preventing the accomplishment of the goal under consideration. It is the attitude which demands knowledge of skills before creative activity is undertaken. It is the attitude of the art teacher who insists upon teaching the essentials of perspective, line, color, and mixing before she allows children to exercise native ability in various art media. It is the attitude which parallels that of the grammarian who sees English essentials as an end rather than as a means for furthering human understandings.

The facts of child growth now teach us that all the child's faculties develop simultaneously and therefore he can neither be educated nor even efficiently trained by the part or atomistic methods of the past. With the new psychology as a wedge, many doors have been opened. A surprising number of schools have experimented for five, ten, and fifteen years with attempts to achieve creative expression. Many of the results, perhaps, the conventional teacher would be hard pressed to evaluate. To others, however, they are endowed with significant meanings.

TO BRING ABOUT PROGRAM INTEGRATION. The arts and crafts have another value in addition to those mentioned. This, more than any other, contributes to program and curriculum enrichment in the broad area or core fields. In the diversified core area, caution must be exercised so that reading, arithmetic, and spelling, which are in reality functional rather than terminal skills, do not become sub-areas within the broader scope taught purely as subject matter. The use of arts and crafts provides a unifying agency for them. Only through wide use of the arts and crafts in a core area can the greatest learning come to the child in accord with his potentialities. When they are used in this way rather than as free-for-all daubing in clay or paint or making crude

wood products without purpose in a given special period, even the conventionalist can see their value.

Further comment should be made regarding the special arts and crafts period. Such a period has values which will be discussed later. Here, it is necessary to point out only its dangers.

In the first place, a special period may be a complete waste of time. Providing lots of material and activity tends to diversify the program to such an extent that unless some unifying agent is introduced, the activity becomes activity for activity's sake. In the second place, there is danger that only minimum values may be realized. This is the case where arts and crafts are isolated from the regular school program. In this period children are allowed to use the materials of arts and crafts and to do a number of things with their hands which they did not have the opportunity to do in the conventional program. In this kind of isolation the academic classroom goes on quite uninfluenced by art and craft materials and activities. Such a program offers limited values although it is true that some values may be realized. Manipulative skill can be undertaken along with some creative activity. But integration of subject matter is missing and so is the motivating factor for bringing individual interests into harmony with broad group interests and needs. In this type of program, although many new individual interests may be revealed, the activities that do evolve have no common background or base of common learning. The scheme is also limited in its educative possibilities in that it fails to relate a narrow field of individual interest to the whole of which it might have been a part.

In the ideal type of school organization, all subject matter is presented as supplementary or as functional skills to be utilized in contributing to large centers of interest and units of experience. In such a program the wide elasticity and large time units provide an opportunity for arts and crafts as they are needed. They facilitate expression of interests of many kinds and also provide opportunity for relating all activities to a common problem. In so doing they aid in harmonizing group and individual expression. When the arts help expand the opportunity for planning, executing, and

appraising learning situations, their employment as integrating agencies is fully realized.

II. ARTS AND CRAFTS IN THE UNIT PROGRAM

In the discussion up to this point, various types of arts and crafts have been mentioned as having possibilities in the unit program. Such arts include work in clay, mural making, dramatics, music, dancing, and creative writing. It is our purpose now to outline some criteria of value in helping teachers and children make selections of areas to be explored.

In the first place, activities selected should result in providing children with a medium of experiencing which will aid in the solution of problems undertaken by the entire group. Making the city layout described on page 89 is an illustration of realization of this goal. The construction of street signs and miniature buildings involved numerous media, but the entire activity led to the solution of a problem faced by the entire group. Thus the experience itself was only incidental to the total over-all problem. In other words, the activities of construction aided the learning situation by showing the child the relationship between the acquired skill and its application.

Second, activities selected should be within the range of maturity of the child so that goals of understanding and appreciation can be made compatible with the child's interests and needs. In selecting activities, teachers must ask themselves whether their choices provide enrichment of the present life activity of the child. This means selection within his experience range and at the same time opportunity for enlarging present understandings. In order to be sure that such is the case it becomes necessary for the teacher to know the maturity of the child, his manipulative ability, his breadth of appreciation, his ability for utilization, and his adequacy of expression. Thus there should be no doubt of the necessity for understanding the child as a prerequisite for satisfactory teaching of the arts and crafts.

Third, activities selected should provide for meeting wide ranges of difference in ability, interest, capacity for understanding, and need for motivation. Many of the well-known

fundamental art activities can be profitably handled in this connection. Such materials allow for a variety of responses from different children and also provide broad stimulation to explore abilities, interests, and aptitudes. Sketching, making murals, painting scenery, reproducing miniature buildings, making models, designing costumes, and working in the theatre arts are only a few of many possibilities.

Fourth, activities selected should facilitate the establishment of personal security, which comes from a growing skill in self-direction, self-assertion, and self-appraisal. Realization of this goal may come through either individual or group activity. Through the realization of such goals education in the arts is moving toward the goals of general education. The teacher becomes an important factor here in assisting the group to make decisions. Whereas the children may develop sensitivity for the appropriateness of the medium or the activity itself, the teacher can assist by suggesting uses and selections which have in them the possibility of developing these abilities.

Fifth, activities selected should be broad enough to provide variety and yet narrow enough to provide continuity. When properly used, variety of media tends to broaden and enrich experience. When variety becomes simply novelty, it has no importance at all.

Variety can be spread so thin as to become ineffective and wasteful of time. The purpose of variety is, in the main, to attain diversity of interests among a group and to broaden individual interests rather than to keep children from becoming bored. When the activities around which materials are used become so superficial that new materials are needed to stimulate lagging interests, it is certain that no values are realized either in the core of the main situation or through the activity which is used for enrichment.

III. ORGANIZATION OF THE ARTS AND CRAFTS PROGRAM

One of the finest ways to develop arts and crafts in the elementary school is to utilize both the broad idea of the correlated program and the best from the idea of the special arts and crafts room. The dual plan is possible, however, only



Finger painting is one of the best activity outlets for young children.
(Courtesy of the Battle Creek, Michigan, Public Schools)

where there are willingness and opportunity to integrate arts and crafts in the total curriculum with the facilities made possible by a special room. It is the purpose of this section to point out the best course to follow when both facilities and staff are available. The purpose and philosophy of integration have already been discussed. Therefore, on this point there is need only to show how the staff in arts and crafts, music, art, dancing, and dramatics, can best be employed.

Organization of the daily schedule has been discussed in a previous chapter. As pointed out, many schools are developing large area blocks in which a diversity of subject matter is employed in relation to unit activity. Where special teachers are not available, the resources of the regular teacher and of the regular room carry on as previously discussed in this chapter. Where special teachers are available, the unit or project may employ them in relation to their fields. This is becoming known as "on-call" teaching. Such a plan may seem unduly expensive; but when it is realized that on-call

teaching can eliminate much of the day-in, day-out special class teaching, the total cost is no more than it would be for a special teacher in a given field. Actually the plan provides not only for integration of subject matter but for cooperative study and direction of a program in relation to the total child rather than to the art interests or the music interests of the child.

The phrase "unit activity" or "core," in which area on-call teaching is most likely to occur, means a great deal more than, for example, arithmetic on one day or spelling the next. It means in most instances not a correlation of two subjects as we knew correlation in the past, but a correlation of several subject-matter fields in a main theme project.

In the former system the work in science, art, or mathematics was entirely independent of the work in any other field. And perhaps, in some instances, the work in these departments should be independent. One conclusion from watching the effect of correlated teaching cannot be denied, — the planning in all fields affecting a given child should be coordinated. Acting on this conclusion, provision is made in this program for the development of a better interunderstanding of aims and methods between the special teachers and the "unit activity."

Being "on call" does not necessarily mean that the teacher so scheduled waits for a special invitation, although a definite request from the home-room teacher is generally used as the method of letting the special teacher know she is wanted on a given day. When she has time on her "on-call" schedule not definitely requested by some teacher, she may become a participating observer. She works with the children. Perhaps an activity of the core program fits in with certain aspects of her specialized training. In such instances the special teacher finds an opportunity to make a contribution to the group. When she can find no way to offer a specialized contribution, she will assist the teacher, informally and effectively, in carrying out any aspect of the core program which the home-room teacher requests.

The advantages of cooperative teaching are evident, of course, in any situation where several teachers have joint responsibility. What is to be said here also applies equally

well to the special teacher of science, or of music, or of home-making. Because current school organization can take the first steps in this direction most easily in connection with the teacher of art, the discussion is presented in this chapter.

The type of program¹ called for requires all teachers to have detailed information concerning group interests, group desires, group temperaments, and group needs. Through the planning periods, participation in which is required of all teachers of a given grade, it is possible for a teacher to become acquainted with individuals as members of a group and to obtain some information of the needs of the group as a whole. Likewise it is possible for all teachers to become acquainted with the attitudes of all other teachers toward the children involved and through the resulting planning activity to evolve a common philosophy in regard to needs, interests, and the life of the group.

Particularly, though, cooperative planning utilizing all available teachers has far greater utility. In the program described, the unit activity provides the underlying theme for the whole day.² If this unit is to be comprehensive, well chosen, well directed, enriched, and contributing learnings, it is absolutely essential that the result represent the very best contribution of all available teachers interested in the project. Some may not be able to contribute, it is true, but the opportunity must not be overlooked for taking advantage of any contribution in the way of an idea which anyone may have to offer.

Cooperative planning, that is, the presence and participation of teachers other than the home-room teacher in teacher-

¹ Grades vary from year to year quite as individuals do. The idea that thirty-five children of grade five one year are quite like those of grade five of the year before is inaccurate. Maintenance of this view is convenient for administrators but devastating for teachers who are called upon each year to cover the same subject matter, exact the same assignments, and obtain equally satisfactory test results.

² This does not necessarily imply that social studies dominate the school day nor does it imply that a given narrow theme, broad as it may sound, necessarily provides the approach in all classes. In this program "A Study of the Fishing Industry" does not signify painting "marine views" in art and playing mermaids in the swimming pool. The two main divisions of the school day are the social activities, i.e., group planning, problem discussion, some sort of cooperative group enterprise, etc., and special interests, either growing from the unit, such as stage construction, mural painting, room beautification, or entirely isolated interests, as far as the rest of the room is concerned, such as practicing on the violin or studying arithmetic.

pupil conferences and in teacher discussion conferences in evaluating teacher-pupil conferences, will inevitably result in the selection of a better balanced, better adapted unit of activity. Likewise it will result in a better relationship, a better understanding, between the home-room teacher and the teachers of special-interest subjects. Thus both the "theme" and the special offerings will be better adapted to each other where adaptation is desired. Where no relationship is involved, desired, or essential, the special interest offerings will be made, at the very least, in relation to the larger needs of the individuals involved.

A good many teachers who try to achieve democracy in the classroom fail completely in adjusting themselves, at the adult level, to a democratic way of life. Teachers cannot expect to achieve in the classroom what they cannot demonstrate at the adult level. Too many are inadequately informed of the real meaning of democracy. Too frequently they think of it as a form of government with no implications for daily contacts. In its fullest sense it implies democratic procedures in every aspect of living. Thus the schools that allow children to elect officers and hold courts but that dictate instructional procedures, are falling far short of the full opportunities implied in "democratic procedures." Cooperative teaching provides a real opportunity for teachers to practice what they preach. In spite of teachers' dislike of being looked at as examples, the opportunity nevertheless offers positive values.

The idea that the child rather than the subject is the basis of instruction finds little response in a situation that demands class after class in a given subject-matter area. Program planning and schedule making must be made in terms of individuals rather than in terms of subjects. A schedule which lists "classes" rather than "opportunities" retards full recognition of this view. On the other hand, cooperative teaching completely breaks down the emphasis upon subject-matter organization. Planning requires discussion of child needs and consequently minimizes the pressure for such terms as prerequisites and class sequence. Nor can any teacher consider a given subject-matter area all-important after participating in several planning conferences with children and other teachers.

One of the requisites for teaching is evaluation of effort in relation to aims and objectives. The sharing of teaching responsibility contributes to more adequate evaluation in that each aspect of a given field of development is seen in relation to the complete, well-rounded development of the whole child. In the departmentalized regime a test over a given scope of subject matter assumes important implications; in the new program a given subject-matter field assumes importance only in proportion to the contribution it makes to the development of the child.

It might be argued at this point that the meaning of what we are trying to imply is that education should become more generalized and less specialized. This, however, is not absolutely the case. In our program, specialized education does have a place; but its place is determined by needs and interests rather than by academic standards.

The place of on-call or cooperative teaching may better be illustrated by an analogy from house planning. When one wishes to build a home, the procedure requires complete and accurate knowledge of utilization, needs, and adaptability to future requirements. Recently, master architects have been making detailed studies of personal and personality needs before they draw even a line on the blueprint. This sort of method is the procedure to be followed by cooperative teaching. Each detail is to be planned in relation to the entire functional pattern.

In a routine which demands evidences of growth in all phases of child development, it is quite likely that improved evaluation techniques will evolve more readily than under the old routine. Growth is on the positive side. Since teachers are dealing with human beings at an age when nature is positively active, there can be no other result than growth. It is not going too far to say that no child can be held static or constant in his development; and yet the traditional set of marks at some levels indicates from 10 to 30 per cent of failures. Who is failing? What has failed to respond? Perhaps the answer is that marks represent a ratio between growth actually occurring and growth demanded or expected by the teacher. The point of view we are advocating takes each child without preconceived standards. No child is thought of as

presenting negative growth at any time. The actions, reactions, skills, functions, are all evaluated in relation to the individual and his group and their ensuing relations.

IV. THE PROGRAM IN OUTLINE

MUSIC. Music can be both creative and appreciative in the elementary school. It should be so taught as to open a vista of wide possibilities for musical expression, and to help children realize the joy and satisfaction that comes through performing, creating, and listening. It is the responsibility of the school to teach children how to utilize music as an outstanding aspect of our cultural inheritance.

All children entering school display great enthusiasm for music. They love to sing over and over the songs they have been taught, and they carry this love for singing into their games and into their lives at home. They are delighted with their introduction to instrumental music through simple melodic or percussion performance. They listen seriously and appreciatively. With proper encouragement they will interpret through the dance such music as they hear. These beginning children have a natural love for music in all its forms — dancing, singing, playing, listening, and simple creating.

The most natural development of this love is through singing. The first important job of the teacher is proper selection of material. To discard the songs learned in the early grades in beginning a formal program involving sight-reading, is often discouraging because it eliminates the spontaneous happiness felt in the earlier music.

Folk songs, which are looked upon by many music educators as an unfailing source of material, have a lasting appeal as the child gets older, and are adapted to many of his learning needs: Children are able to sense the vitality and the richness of folk songs. Folk songs, further, lend themselves to adaptation to the broader curriculum fields of study. It is possible, in studying a unit involving people of other nations, to select song material of the region under consideration. Even young children can gain some understanding of the civilization they are studying from its folk song material.

Folk music is without a doubt a mirror of the relation of geography to national culture and customs. In the upper elementary grades, for example, children can learn the songs of a period they are studying, or they may study rather objectively instrumental compositions, the composers of the period, and the circumstances which motivated their works. And finally, style and type of the music can be seen as a product of environment.

How any music teacher has expected to secure much appreciation of music merely by playing records on a phonograph or by having children listen to the radio, is quite beyond understanding. One does not appreciate by being told to do so but by actual participation. Of course children should have an opportunity to listen to various types of music if they desire to do so; but music produced by members of their own group, by other school classes, or by neighborhood amateurs may bring fully as much listening and appreciative enjoyment as that produced by professional symphony orchestras or choruses. Most appreciation of good music will be gained by taking part in producing it. Listening should be distinctly subordinate because children learn best when engaged in an activity. Appreciation should, therefore, be an integral part of the music program and not a distinct activity. It will be gained by personal participation, with occasional brief listening periods when it seems profitable to have them. Appreciation cannot be poured in; it must be a real purpose and a functional activity of the child.

Any elementary school grade is competent to do work in musical composition that is related to certain phases of unit study. A poem or a story written by someone in the group may motivate work of this kind. All the children working together may contribute phrases or words leading to the completion of the project. In developing the music, the children will be encouraged to sing phrases that might seem to fit. The finished product certainly will not represent a work of art and will frequently violate the "rules," but it will represent expression in musical terms.

Older children are more likely to choose instruments in connection with their composition work. Their starting point, as in the lower grades, will frequently be a group composition

(literature or poetry). With their broader experience and greater maturity, they will be able to analyze somewhat in terms of rhythm and meter; and when they have established "form," the selection of the tune will be simplified. Frequently also their need for a composition will be motivated by their work in dramatics or by their study of a period in which they wish to experiment with contemporary factors governing composition.

Opportunities for the construction and use of instruments of a particular type are quite unlimited. In a good many instances the use of ancient scale-organization and tuning of instruments has led to a discussion of our own aspects of theory.

Much of the boredom which accompanies singing at the present time seems to be due to emphasis upon reading notes at sight. Many music supervisors seem to feel that children should read music as easily and fluently as they read language. This comparison with language reading sounds well but is largely misleading. Language reading is carried out constantly, while the reading of music is done at but infrequent intervals. Further, the child is accustomed to language from infancy, while singing is a rather occasional occupation. Every youngster has been spoken to and has talked. When he enters school, he has a vocabulary of about twenty-five hundred words. He has seen signs and has observed others reading newspapers, magazines, and books. On the other hand, his first-hand acquaintance with music is rather limited. He has heard music over the radio and possibly played in the home. He may have sung a little and may know a few tunes. His acquaintance with music is certainly only a fraction, though, of his acquaintance with language.

Furthermore, children learn to read by a laborious process that occupies a large portion of the school day. Singing can legitimately be allotted only twenty or thirty minutes per day. It is too much to expect children to read music competently. Added to this fact is the question of method: reading has been investigated continuously for years and is now taught scientifically, but methods of music teaching have had almost no investigation and are still rule-of-thumb.

Undoubtedly the validity of teaching sight singing can be

challenged. Music teachers must admit that few children really can sing by note and that most of them learn tunes by hearing others sing them or by hearing them played on the piano. Even amateur quartets, choruses, and choirs learn their parts by rote, in spite of the fact that many have been drilled in note singing throughout their school days and presumably were proficient at it by the time their formal schooling was completed.

Most individuals who play musical instruments can, of course, read by note. These people, though, must practice regularly and must have the benefit of individual or small-group instruction. These are quite different conditions than those found in public school music.

Of course we shall always need professional musicians to furnish entertainment by means of the radio and the concert hall and to serve as accompanists and directors. These people need professional training which they cannot hope to obtain in the public school. But since most children are not to become professional musicians, they should not be afflicted with the objectives, techniques, and drill required of those expecting to earn their living through music.

Children, of course, should use notes but only incidentally. From the third grade on, music books should be before them. These are guides, to be used with whatever proficiency the children possess. The teacher, for example, indicates the meaning of holding a half or a quarter note not long enough or too long. She explains the meaning of rests if they are ignored by the group. She indicates the position of the higher notes on the staff. Incidental note reading thus takes place but only as it functions in learning a song. It occupies only a small part of the period and is only infrequently drilled and so does not become boresome. It is treated as a tool for gaining enjoyment, not as an end in itself.

Children who enjoy playing in orchestras and bands should, of course, be given every possible opportunity to do so. Many schools furnish class instruction in this activity free of charge or at a small cost. Probably playing instrumental music can afford enjoyment only if there is fairly good proficiency in note reading and in technique. It is, therefore, on a higher level and will not be participated in by all young-

sters. The school should foster orchestra and band as worthwhile activities. Doubtless individual instruction, if the school facilities will permit it, should be given to all those who can profit by it. Enjoyment should be the principal aim since few children taking part in school orchestras and bands will ever make their livelihood as professional musicians. If the school helps children to discover their potentialities as musicians, encourages development, and furnishes pleasure to children or adults through participating in instrumental music, that is about all that can be expected.

ARTS AND CRAFTS. There will be no attempt here to sketch even an outline of a program for this field. Arts and crafts are a resource rather than a content of study. In the one-teacher school or in the village elementary school where no special room or special teacher is available, the subject can be handled only as supplementary to the total program. The work which can be done, however, in a one-room school under the direction of a teacher appreciative of the contribution of the arts, is unlimited. Here there is necessarily no schedule rigidity. Art for all grades can be developed around a program calling for improving the total school environment, inside and out. Pictures, murals, and landscaping for the purpose of providing artistic surroundings are basic in any art program.

Where a special room and teacher are available, the program likewise should grow out of the environmental needs of the school and community. The program in this kind of situation is one of supplementing the many resources developed around the potentialities of children. Such resources include all sorts of common tools, large and small, power saws, hammer, nails, clay, looms, drawing materials, and equipment for leather tooling. Lumber, paper, paints, screens will also be available. In some of the better schools there will be a kiln for firing and glazing pottery. This room and its teacher will be a resource, equipped to give assistance to group unit activity and for long hours of individual exploration and creation according to interests and abilities.

Where fine equipment and materials cannot be made available, children can often bring them from home. Lumber from back yards and basements can be used. Papier mâché makes

excellent articles of various kinds, and the clever teacher can do much with newspapers. In rural communities there are almost unlimited possibilities for such homely materials as corn husks, milk-weed pods, corn cobs, and berries.

Painting or drawing from models is, of course, to be avoided unless it fulfills the needs and interests of the children. So is the sort of curriculum guide which outlines what is to be done grade by grade and then insists on set instruction. Children are seldom interested in drawing from models, preferring rather to draw from memory such things as pets, street scenes, and home scenes. Neither do they want to receive formal instruction in advance of starting to paint or draw. After they have made a beginning, they may wish help. To insist on formalities before they start their work is to kill much interest.

THE DANCE. Like language, music, arts, and crafts, the dance is a medium of self-expression. With the right conditioning and practice, children can express themselves just as intelligibly by means of the dance as they can through any of the other media. Furthermore, it serves as an outlet for pent-up physical energy and for emotional blocking. Rightly used, it becomes a most valuable part of the vital experiences which help to develop children into well-balanced, socially adjusted, normal youngsters who have built, during their childhood, a foundation of lasting growth and development which will serve to carry them through the difficult periods which lie ahead.

As with all other forms of expression, the dance should have no set curriculum or fixed exercises. One expresses when he feels and not upon command or precept. True, it is perfectly proper for the teacher to have at her command a knowledge of the types of dances which children of various ages commonly enjoy. It is also proper for her to stimulate children toward activities in which normal youngsters of that age usually engage. To devise and to enforce a rigid curriculum in the dance, though, is as puerile and lifeless as to approach vocal music by note learning or to teach art by lectures on form and design.

The dance, further, should not be encumbered by narrow limits beyond which it may not pass. Dances often grow

quite properly into dramatizations, plays, and other forms of dramatic effort. To limit the bounds of the dance is to pigeon-hole expression and enjoyment. Like all other activities, it should be a part of the worthwhile units or projects being carried out by the children.

In the dance, the place of the specialist is even better defined and more fundamental than in the rest of the arts and crafts. Most regular classroom teachers are not by nature or training equipped to give assistance to children in this form of activity. The teacher has to be someone who loves this form of expression, who feels rhythms well herself, and who is able to demonstrate how the dance should be done.

In practice, for the children of the primary grades, the dance teacher should be the one who teaches music. For children up to ten years of age, the two are irrevocably woven together. Without music there can be no dance, and without the dance the children seem to have no medium for displaying the emotions they feel.

For older children, the dance teacher will ordinarily be the gymnasium instructor. The skills demanded by children of from ten to thirteen or fourteen years of age represent a much more highly specialized type of knowledge than that required for younger children.

As with all other creative activities, the special teacher should coordinate with the regular work of the classroom. The dance is not a thing set apart; instead, it is but part of the whole. Children often, for example, secure their stimulation from music, social studies, reading, or science. Indian dances, motivated by the reading period, are very common. Negro spirituals serve as stimulation for dances embodying the hopelessness and everlasting sorrows of slavery. The story of snowflakes fluttering down in the first storm of winter may encourage a dance. Certainly one does not dance unless he feels, and he does not feel unless he has experiences. Experiences may be actual or they may be gained vicariously through reading, art, discussion, or music.

The dance is taught in a favorable environment of attractive stage, gymnasium floor, or playroom, equipped with radio, record player, and rhythm instruments. If certain standard costumes can be provided, so much the better.

The teacher does not simply announce the dance and demonstrate its steps. Instead, building on a knowledge of real or vicarious experiences that the children have had, she helps them recall emotions and stimulations. Then, with the proper moods established, she encourages interpretations as each child feels and reacts.

Children who are bashful or self-conscious must, of course, be urged to participate. Occasionally the teacher must give help with steps which children are unable to execute. Generally, though, the dance teacher serves as a guide and as a motivating and coordinating agent.

With moods once established and with action started, children are stimulated to express themselves clearly and forcibly. This form of expression, rightly done, is as understandable and as clear as the canvas, the song, or the printed page.

V. IN CONCLUSION

The arts and crafts are but part of the equipment for attaining the ultimate goal of the elementary school — the facilitation of growth and development of the child into a well-rounded individual, physically, mentally, socially, and emotionally. As such they serve as media of physical development, of creative expression, of socializing, and of mental stimulation.

As well as being separate areas, the arts and crafts assist in carrying out the regular classroom activities in which children are engaged. They are thus unifying and expressive agents rather than activities whose ends are found exclusively in themselves.

Arts and crafts are not taught through a formalized course of study which prescribes the activities for each grade level and the way in which they should be taught. Instead the arts and crafts utilize the worthwhile experiences and activities of the regular classroom. Duplication is not to be feared; in fact it is often to be welcomed. Thus children in both the first and the sixth grades may be drawing landscapes, but on a different level. Children of both the second and the fifth grades may be engaged in dances, but in different ways.

Special teachers of the arts and crafts are highly desirable. Frequently they should originate activities as well as help the regular classroom teacher with activities in which she cannot easily be proficient. Such special teachers should be familiar at all times with what is happening in the regular classrooms and should endeavor in every way to correlate their activities with individual and group needs.

Special laboratories for the arts and crafts are highly desirable although not absolutely necessary. No teacher of a regular classroom should give up in despair if she does not have specialists or special laboratories at her disposal. Instead, she should utilize whatever facilities she has to give children an opportunity to express themselves as well as they can. Lacking tools and other equipment, they can be encouraged to employ and develop their own resources.

To neglect creative expression through the arts and crafts is to neglect the training of a very real part of the child. Without opportunities in this area children are robbed of a part of their birthright which society owes an obligation to furnish.

SELECTED REFERENCES

1. *Art Education for the Elementary Schools of Ohio*. Columbus, Ohio: State Department of Education, 1940.
2. BARTON, FREDERICK B. *Music as a Hobby*. New York: Harper and Brothers, 1941.
3. CHRISTIANSON, HELEN. *Music and the Young Child*. Washington: Association for Childhood Education, 1936.
4. COLE, NATALIE R. *Arts in the Classroom*. New York: The John Day Company, 1942.
5. COMMISSION ON SECONDARY SCHOOL CURRICULUM OF THE PROGRESSIVE EDUCATION ASSOCIATION. *The Visual Arts in General Education*. New York: D. Appleton-Century Company, 1941.
6. D'AMICO, VICTOR E. *Creative Teaching in Art*. Scranton, Penn.: International Textbook Company, 1941.
7. DELEMONS, PEDRO. *Creative Art Crafts, Book I*. Worcester, Mass.: The Davis Press, 1941.
8. HARTMAN, GERTRUDE, and SHUMAKER, ANN. *Creative Expression*. Second edition. Eau Claire, Wis.: E. M. Hale and Company, 1939.
9. KINSELLA, HAZEL G. *Music and Romance*. Camden, N. J.: RCA Victor Company, Inc., 1930.

10. LEE, KATHRYN D. *Adventuring in Art*. New York: D. Appleton-Century Company, 1939.
11. MATHIAS, MARGARET E. *Art in the Elementary School*. New York: Charles Scribner's Sons, 1929.
12. *Music Education in the Elementary Schools*. Sacramento, Calif.: State Department of Education, 1939.
13. NEWKIRK, LOUIS V. *Integrated Handwork for Elementary Schools*. New York: Silver Burdett Company, 1940.
14. PITTS, LILLA B. *The Music Curriculum in a Changing World*. New York: Silver Burdett Company, 1944.
15. *Thirty-Fifth Year Book of the Committee on Music Education of the National Society for the Study of Education*. "Music Education." Bloomington, Ill.: Public School Publishing Company, 1936.

Auxiliary Services and Supplementary Content

I. AUXILIARY SERVICES

IN THE MAIN, auxiliary services are those facilities which have for their purpose the achievement of broad educational goals but are not necessarily formalized instructional activities nor a part of formal instructional content. The two most important of these facilities are the health program and the library services. Of course it is possible that a given school may have a specific library period, and it is even more likely that the school maintains a definite health period.

Sometimes the library services are quite separate in their organization and administration from such classes as reading, English, and social studies, and in other instances library services exist as supplemental facilities for all class work. The latter organization is more in keeping with the philosophy of instruction which has been built around our knowledge of how children grow and learn.

The health program likewise exists in many different types of organization. In many schools health and physical education are combined in a period meeting daily or two or three times a week. In such an organization as this it is not uncommon to find the daily period devoted three times a week to informal physical education activities and the remaining two days given over to formal health instruction.

In the following sections appraisals will be made of the most common types of organization of these services.

LIBRARY SERVICES. In none of the instructional programs described in Chapter 3 is there a specific library period.

However, a library of some kind exists in almost every school. In the poorest school there are a few books available for children; in the large, better equipped schools there is a library with many books. Only where a regular library exists is it possible to offer a formal library period. Such an offering usually provides two or three school periods a week to each grade. During these periods the entire grade comes to the library, with or without the home-room teacher. Where a library exists without a librarian, the home-room teacher assumes responsibility for supervising and directing the activities of the children.

There are many weaknesses in this kind of organization. In the first place, the library period becomes either a content period where children are taught library skills or it becomes a kind of study hall. There is nothing wrong or disgraceful in knowing library skills, but frequently children struggle with library systems without ever learning to love books or reading. And just as often it so happens that learning library systems leaves too little time for learning to know the library as an accessible source of information for problems on which children may be working.

Even in a fairly large school it often happens that the library is not quite large enough, or has not quite enough books, or has not quite enough help to make its facilities available at all times for all children. Some limitations need to be provided and some sort of scheduling is almost always necessary. This is not, however, carrying scheduling to the extreme already noted, in which each grade has a definite period and can use facilities only during that period. The best type of utilization results when children can come to the library without coming as a grade unit. Where this is possible, they can use the library as a source for materials related to a unit or project or as a source for information on some individualized interest. Such utilization also provides opportunity for recreational and broad reading activities.

Where a librarian is available, she should be considered a special teacher. This places her in the same category as the art teacher, the science teacher, the physical education teacher. As such a staff member she should be available as an "on-call" specialist in the broad unit area. She meets with

those who are planning unit sequences and is a frequent visitor in each room where unit activity is developed and carried out. Naturally she has a specific responsibility. It is her task to suggest resources, to name books and make them available, to collect pictures, posters, and other materials which might be advantageously used in the unit, and to arrange library displays in relation to dominant group activities in various grades.

Even where a good central library is available, partial decentralization is highly desirable. Children must learn that the library is a place where help can be received and from which books can be taken home for intensive study. Nothing will do more to inhibit library use than to condition children in such a way as to regard the library as something sacred or awesome. On the other hand, nothing will do more to develop habits of use carried into adult life than to portion out to the various home rooms books and other material readily available to children.

Another argument for partial decentralization of library facilities can be made. It is based on the idea that the proper carry-over will not be made unless the child gets accustomed to having books around him. Many children, as a matter of fact the majority of children, grow up in an environment which is sadly lacking in its bookish associations. To overcome the effects of such a background, it is essential for the child constantly to find himself in an environment of good books. His home room and his classrooms, particularly his home room, should simulate a comfortable, challenging, and enriched home atmosphere. The child who goes through ten or twelve years in such a background with literary challenges within easy reach, is likely to carry it into adult life.

There are certain library skills which every child should learn. Knowledge of them gives him confidence and prevents inhibitions which keep him away from the resources in large city libraries. It is not the purpose here to outline these skills or to arrange a sequence for teaching them. They are well enough known already to librarians and to teacher-librarians.

The skills selected for teaching should be organized on a source unit basis. Such an organization makes it possible for home-room teachers and their groups to relate the teaching of



Rest periods are an absolute essential for children in the lower grades.
(Courtesy of the Battle Creek, Michigan, Public Schools)

library skills to unit activity and provide the opportunity for such learning when there is need for the skill. This idea makes skills secondary, not something to be learned for its own values but tools in a broad learning opportunity.

HEALTH AND PHYSICAL EDUCATION. By treating this subject under the classification of auxiliary services we do not mean to imply that physical education classes should not be available daily for all children in the elementary school. Health services as such are common in nearly all good schools. There needs to be, however, a greater integration between physical play activities and the dance, music, pageantry, and dramatics; and likewise, there needs to be greater integration between all these activities and the broad unit areas. Where such broad integration is achieved, it is not necessary that periods be given over daily for purely physical activities. This does not mean that there are no values in either organized play or free play. Both are desirable and necessary.

The total school program is concerned with the development of the whole child, his physiological, mental, social, spiritual, and emotional growth. The goal of the program is to facilitate maximum development of each boy and girl in respect to his potentialities. It is the purpose of the school to provide experiences which will aid in the realization of this goal of child growth and development.

Health and physical education in such a concept share with other areas in their contributions to this end. They are thus more than a subject to be taught within an allotted period in the school day. Consequently, responsibility for these activities cannot be delegated exclusively to a given class period or to a special physical education teacher. Every administrative or executive officer and every teacher has a part to play in this program. As intimated above, it affects not only physical and mental health, but emotional and social development as well. The broader point of view of today recognizes the health aspects of all instructional experiences and of all experiences outside of school. Stated briefly, the objective is the maximum development of integrated individuals who apply the principles of wholesome living to their daily life activities.

This point of view did not arise in a day nor does it result from war-time thinking. It has evolved over a long period of time. According to a statement in a Michigan Department of Public Instruction Bulletin, it is a growing one represented by all the five steps in the following stages of development:¹

1. This period was characterized by an effort to detect and exclude those in the school who, because of communicable disease, threatened the welfare of others.
2. In this period there was added the responsibility of finding the pupil with physical defects and taking steps to secure correction of them.
3. This period was marked by a growing consciousness that health activities are carried on not only for correction but for educational values as well.
4. This period was marked by an expansion of stage three and included such concepts as (a) all teachers are health

¹ ELLIOTT, EUGENE B. *The Health Services in the Schools* (Bulletin No. 321). Lansing, Mich.: Department of Public Instruction, State of Michigan, 1943, p. 7.

teachers, (b) the health program concerns itself with personal and community health, (c) personal health should include physical, mental, and social well-being, (d) health education is a 24 hour program 365 days in the year and involves the co-operation of all home and community agencies as well as the school.

5. This period, the present one, is marked by a growing realization on the part of the physician, dentist, and health service groups that they have a definite responsibility to make a contribution to the educational experiences in the school in the area of healthful living and that they should cooperate fully with the schools to achieve this end.

During the early part of the century, physical education was concerned with corrective posture and with the systematic and regular development of muscles in various parts of the body. Physical tests and examinations were made and recorded for all pupils. Each individual was urged and expected to undertake prescribed activities which were designed to correct imperfections in posture or to develop muscles lagging behind others. Games had little place except to furnish motivation or reward for the systematic work otherwise prescribed. Formal group as well as individual drill was popular. It was the era of emphasis on wands, dumb-bells, ladders, weight pulling, rope climbing, horses, parallel bars, and mats.

In the twenties and thirties came the great emphasis on free play. This meant games and more games. In some schools emphasis was given to games that could be carried on into adulthood. In this category were tennis, golf, quoits, volleyball, and archery. In the main, boys emphasized the more strenuous group sports; and individual games with a carry-over into adult life became girls' choices. Enjoyment and recreation was the guiding principle, with muscular development and health education decidedly incidental. Today health education has broadened considerably beyond either of these concepts, as indicated by the following illustration.

A rather recent appraisal of the health program in the Ohio State University School resulted in a statement of purpose. It was to facilitate physical fitness, the achievement of success, a growing sense of security, and the development and

clarification of the child's social outlook. Further goals were the encouragement of creative expression, the ability to think, sensitivity to social problems, and ability to co-operate.¹

In this program it is realized that the physical, the emotional, and the intellectual aspects are all component parts of a developing personality and cannot be dealt with separately. Physical well-being is considered as resulting only from proper medical attention, proper utilization of diets, and opportunities for proper body functioning and development. On the other hand social, mental, and emotional well-being are regarded as resulting only when the environment is so ordered as to produce a minimum of anxieties, conflicts, and stresses. In this connection it may possibly be a fact that the free play period of an earlier day furnished an outlet or a compensation for the child who spent most of his school time in classes where anxieties, conflicts, and stresses were often inherent in the ordering of the instructional program. Thus such a broad viewpoint demands that each instructional area must make its contribution.

The University School attempts to attain breadth in its program by examining the characteristics of an optimally healthy person. These characteristics, in the area of personal living, seem to be the following:²

1. The individual's vigor and tone imply reserves of energy and initiative which require a satisfactory balance of the metabolic processes, freedom from infection, normal functioning of bodily routines, and an absence of emotional and physical strains. He is characterized by vitality and animation and tends to hold an optimistic point of view. As a result of genuine security he is self-composed and seldom shows signs of embarrassment. He is growing in readiness for adventure, in enjoyment of active participation, and in eagerness to meet the problems of living.

2. His bodily parts function harmoniously with optimum efficiency in energy transformations. His physical make-up is indicative of harmonious and unified activity, muscle coor-

¹ GILCHRIST, R. S., and others. "Improving the Health Program of the Ohio State University School." *Educational Research Bulletin*. XXII: 143-162. Sept. 15, 1943.

² *Ibid.*, pp. 145-154.

dination is well developed, and there is no glandular imbalance.

3. The individual develops a sense of achievement. He is growing in faith in himself through reasonable success in sports, in the social graces, and in intellectual, aesthetic, and practical activities. Balanced interests and a sense of well-being or personal effectiveness are developed. The satisfaction experienced from the successful completion of an undertaking, as well as from the approval of the group, stimulates him to continue giving his best efforts to the solution of other problems.

4. He gradually achieves status as a person through growth in independence, in establishing security, and in developing a sense of belonging. He feels that his selfhood has some anchorage, the security of which is evidenced by his growing social status. He is gradually achieving recognition from the group through his intelligent suggestions and his method of solving problems.

5. He gradually frees himself from childish egotism and shows growth in social sensitivity and willingness to sublimate personal desires to the larger concerns of the group. He increasingly takes more interest in and derives more satisfaction from participation in group problems.

6. He understands the wide range of variability that exists among "normal" individuals, and becomes better able to accept his own personal variations and hence to live more intelligently. Furthermore, he becomes more intelligent and less emotional in his reactions to and criticism of variations in others. He understands that he himself contributes to normalcy in basal metabolism, blood count, blood pressure, height and weight gains, at certain age levels; if the range of his own measurements is too great he seeks medical advice.

7. He gains in understanding of his sex role. His understanding of the masculine and feminine roles and what they require and offer is increasing. There is growth in understanding of the maturation cycle from infancy to adulthood and perception of his own maturation in the light of these normal developments.

8. He gradually achieves a consistent outlook on life which serves to unify his living and to give it significance and direction.

The optimally healthy individual has in his personal-social life the following characteristics:

1. He has status in the family, for the other members recognize his particular interests and the certain abilities in which he excels. Growth is evidenced by ability to participate freely in the solution of family problems, recognition of the causes of conflicts in standards between himself and his parents, and sincere efforts to arrive at satisfactory adjustments.

2. He is growing in status in various groups and with his age-mates of both sexes. This is evidenced by increasing ability to do a number of things well enough to win the approbation of his fellows, and to accept group responsibilities.

3. He is frank, communicative, and sociable, and is growing in his ability to enter heartily and with enjoyment into the art of social intercourse. His socialized emotional expressions are wholesome. As a result of the growth of responsiveness to social stimulation, he is gaining in ability to form acquaintanceships easily and is developing the art of enjoying the companionship of his fellows. This growing ability to meet people is an index to social self-confidence and inner security, which is a direct outgrowth of his sense of status.

4. He is considerate and helpful and is growing in his concerns for other people, their plans, successes, and failures. There is evidence of growth in ability to enter appreciatively and sympathetically into the lives of others, sensitivity to the effects of his own actions as a citizen, producer, and consumer upon the welfare of others, and concern for the greater good. This is evidenced by understanding of and intelligent participation in community health measures such as quarantines, immunizations, vaccinations, and tests such as the tuberculin, Schick, and Wassermann.

5. He is growing into a satisfactory heterosexual adjustment. This is indicated by growth in the ability to work out both immediate personal life and activities in wider relationships without hindrance from antagonistic feelings toward the other sex. This development is dependent upon the understanding and appreciation of the current roles of the sexes and upon the understanding that as changes in society occur some aspects of the present roles may also change.

In the area of wider social relationships the optimally healthy individual should, in the opinion of the committee members, have the following characteristics:

1. He grows in zeal for promoting more healthful living through social reconstruction. His understanding of the

individuals whom he meets develops sufficiently to form the basis for a generalized understanding of humanity and human needs. He learns to evaluate social institutions in terms of their effectiveness in meeting human needs. His sense of responsibility for sharing effectively in the solution of community problems and his understanding of the techniques of effective action are increasing. He grows in his concern for promoting public health through such means as control of communicable diseases, pure food and drug laws, housing, recreational facilities, control of noise, smoke, and soot, and more effective utilization of the press and radio.

2. He achieves status in society through increasing economic independence and social competence. Increasingly he feels that he is giving society value received and that his economic contribution is wanted.

3. He achieves status in society as a contributor to the furthering of more democratic ways of life. He becomes more and more an adult citizen. Such development grows out of an understanding that the process of natural selection needs to be replaced by cooperative procedures which provide a more humane type of sifting, that natural selection is inevitably modified by man's cultural patterns, and that the resulting selection needs to be studied and understood, so that intelligent social control may be provided.

4. He grows in his ability to participate effectively in the work of social institutions. Through his evaluation of social institutions and his understanding of people, he develops the ability to work for the ends which he desires through the means at his command.

Such a statement of goal is based on a very broad viewpoint concerning the responsibility of health education. It may be broader than usual but it certainly is in harmony with current thinking. It considers a program for adequate mental and emotional development as at least a partial responsibility of health education. It also regards the physical, the mental, and the social as but different aspects of an individual which can be isolated only for analysis and discussion.

HEALTH SERVICES. If the contributions of the health and physical education program are to be broad, then there is little doubt that health education is a joint responsibility of

the total instructional personnel. Planning such a program must be done cooperatively by administrators, teachers, health officers, and lay representatives.

Important among this group is the classroom teacher. She has an opportunity to relate the instructional program to the health situation and to make referrals and analyses of individual children.

Health conditions are always arising which can be given instructional emphasis. For example, an epidemic of measles can be made the occasion for an inquiry into the spreading of disease by germs, how infection can be prevented, and the question of legal quarantine. The inevitable colds can easily lead to a study of causes and preventive actions. Accidents can bring about a study of accident prevention and the whole problem of safety.

In the proper handling of referrals the classroom teacher has an important responsibility. Referral to a nurse, doctor, or other clinician is usually her responsibility. Recommendations should be based on constant observation and familiarity with the child's health history. To carry out this role effectively it is essential that the teacher have training which will qualify her to detect significant physical, social, and emotional behavior. Familiar illustrations of such behavior are holding a book too close to the eyes, squinting, faulty breathing, listlessness, bullying, and hyperactivity. Where a physical education teacher is available, much assistance can be given the home-room teacher in the way of testing vision and hearing, weighing, and measuring. Regardless of whether a physical education teacher is available or not, the home-room teacher should not overlook any aspects of health in her journal records.

Like all other special teachers, the physical education teacher is an on-call specialist in broad unit activity; mental and emotional health are just as much her responsibility as is big muscle development. This has two implications. First, the training of physical education specialists will call for greater breadth than ever before. Not only a knowledge of games, but knowledge of tests, proper adjustment, signs of insecurity, emotional maladjustment are all areas to be studied by persons preparing for this specialty. And sec-

ondly, the interrelation of games and rhythms, music, pageantry, and dramatics must be fully explored.

Where a physical education specialist is available, she will advise, suggest, and motivate general planning for healthful living both in and out of school. She will assist teachers in improving their techniques of observation, and will also demonstrate such procedures as weighing, measuring, and testing. If the school is small, she will carry out this type of activity herself.

Where such a special teacher is not available, the school nurse will carry out these activities. The nurse likewise will assist in regular classroom activities that involve a health problem. She will also visit homes and, as a result, will help interpret home conditions. Because of her training and the nature of her specialty, she will work with the teacher and the community in arranging for an attack on the correction of serious health and physical deviations. To do this effectively she will need to know community health facilities and ways and means for bringing about effective use of them.

The only professional health services many children experience are those provided by the school, but such services should not be considered as eliminating the need for periodical examinations by a family physician or dentist. The facilities of most schools do not permit complete examinations. Those given usually include a check of eyes, ears, teeth, throat, thyroid, heart, chest, feet, abdomen, general posture, general condition, and nutrition. More thorough examinations must be done by the family specialist or arranged, when this is impossible, through emergency facilities. Although yearly and semi-annual examinations are greatly to be desired, a minimum program should include examination on beginning school, at the beginning of the junior high school grades, at the time of entrance to the senior high school, and again during the final year.

As outlined by a Michigan Bulletin the procedures of health personnel are as follows:¹

¹ ELLIOTT, EUGENE B. *The Health Services in the Schools* (Bulletin No. 321). Lansing, Mich.: Department of Public Instruction, State of Michigan, 1943, pp. 19-22.

PROCEDURES OF HEALTH OFFICIALS

1. At the beginning of each school year, in counties or cities where there is an organized health department, the health officer should acquaint teachers and school officials with the policies of the health department on the exclusion of pupils from school, reporting of communicable diseases, isolation of patients, quarantine of contacts, and readmission to school. Staff members of the health department should help the teacher and children to develop the technique of inspection for communicable disease control. The regulations of the Michigan Department of Health provide that children having or suspected of having a communicable disease be excluded from school.

2. Representatives of the health department visit persons reported as having or suspected of having a communicable disease and give instruction regarding bedside care, isolation, prevention of spread, and information regarding restrictions on other members of the family.

3. After exclusion from school, it is desirable that the health officer issue permits to pupils for readmission. In communities where the local health officer is not a physician, he will usually authorize the teacher to accept a certificate from the family physician.

4. The health department should notify school authorities of the appearance of communicable diseases in the school. Many communities use a regular form for giving names of patients, diseases, and the time or terms for the patients' and contacts' return to school.

5. The health department should initiate policies and plans for immunization of children against diphtheria, vaccination against smallpox, and for tuberculosis case finding, and should cooperate with the local medical society and schools to assure the success of these plans.

6. Pamphlets for general distribution and articles for newspaper publication are provided by the health department; films are usually made available; and talks on various phases of communicable diseases are given in the community by staff members of the health department.

7. The health department should be ready to assist the teacher and children in the development of educational experiences in disease control.

RESPONSIBILITIES OF SCHOOL ADMINISTRATORS
AND TEACHERS

1. At meetings of teachers, especially those occurring early in the school year, the school administrators and health workers should clarify the educational objectives and procedures in the communicable disease program and discuss the responsibility of the teacher in this program. The giving of awards or certificates for perfect or near perfect attendance is a practice which should definitely be discouraged as it tends to defeat the program for the control of communicable diseases. Discussion of continuous observation of children and demonstration of inspection for communicable diseases may well be included in programs of teachers' meetings. Instructions for the guidance of teachers in these areas are available.

2. The teacher should know the personnel of the health department working in her territory and she should find out what educational material on communicable diseases is available from the health department. Particularly when a communicable disease is prevalent in the community it is advisable for a teacher to know what materials the health department has for distribution on that disease. Helpful information may be obtained from timely articles in the local papers giving the comments of the health officer or other authorities on the incidence, early signs and symptoms, and control of communicable diseases occurring in the community.

3. The teacher should have access to the personal health appraisal record of every pupil on which are listed the communicable diseases which the child has had and the diseases against which he has been immunized. The school should have on record the name of the family physician of each child, so that in an emergency the child may be cared for by his own physician.

4. As a part of continuous pupil observation the teacher should look for signs of illness such as unusual flushing or paleness of skin, rash, fever, watery eyes, or nasal discharge and she should realize that these signs and symptoms might be early manifestations of communicable disease. When a communicable disease is prevalent in the community, the teacher should practice a more formal type of inspection.

5. Provision should be made for the separation of a pupil who is sick and who may have a communicable disease. A corner of the room separated by a curtain or screen may be used if no more satisfactory arrangements can be made.

6. Under no circumstances should the teacher suggest a diagnosis or prescribe or give medicine of any kind to a pupil.

7. In accordance with the "Regulations for the Control of Communicable Diseases" of the Michigan Department of Health, the teacher is authorized to exclude from school any pupil who shows signs of illness such as unusual flushing or paleness of skin, rash, fever, watery eyes, nasal discharge, or nausea. Pupils with beginning colds should be sent home for their own good and for the protection of others and should remain home for at least the first three or four days of their illness. Many communicable diseases start with signs and symptoms similar to those of a common cold and by sending home pupils with these early manifestations of a cold, the teacher may be excluding children who are developing measles, whooping cough, scarlet fever, or some other serious communicable disease. When a pupil is sent home because of illness, a note should be sent with him so that the parents will be fully informed of the reason for exclusion.

8. Transportation should be available when necessary for taking a sick child home or to the family physician.

9. Teachers and school officials are required by regulation of the Michigan Department of Health to report suspected cases of communicable diseases to the health department. Prompt reporting of suspicious rashes and sores will often prevent the spread of minor communicable diseases such as itch, impetigo, ringworm, etc., which may become troublesome in a school. Cases should be reported as "Child is excluded because of suspicious rash."

10. Careful inquiry into the reason for a pupil's unexplained absence from school, especially for a period of three days or more, may disclose the presence of a communicable disease in other members of the family. This information would be particularly important in case of scarlet fever or septic sore throat in a family distributing milk, and it should be transmitted at once to the Health Department.

11. Instruction of pupils regarding communicable diseases in the school is the responsibility of the school.

12. The school should help to promote the education of parents regarding their responsibilities in the control of communicable diseases in the school.

RESPONSIBILITIES OF PARENTS

1. Parents should acquaint themselves with the approved immunization schedule issued by the Michigan Department

of Health, and should try to make arrangements to have their children cared for in accordance with its recommendation.

2. Parents should know the common early signs and symptoms of communicable diseases and should keep at home any child showing these signs and symptoms.

3. It is imperative that parents abide by the rules and regulations of the health department for reporting of communicable diseases, isolation, and quarantine.

RESPONSIBILITIES OF FAMILY PHYSICIANS

1. It is most desirable that every family physician immunize his own patients. When this procedure is not practicable, it is advisable that the local medical society and the health department make arrangements that are suitable to the local situation. In communities where there is no full-time health department and where the percentage of immunized children is low, the medical society should take the initiative in the promotion of measures to increase the number of immunizations.

2. The treatment of patients is definitely the responsibility of the practicing physician.

3. The family physician is required by regulation of the Michigan Department of Health to report cases and suspected cases of communicable diseases immediately to the local health department. He should cooperate in enforcing the rules and regulations on isolation and quarantine.

4. The family physician is in a strategic position for educating his individual patient and for promoting a cooperative program of health education in the community.

The preceding lists of relationships and guides have been included because they seem well defined and utilize all personnel concerned in a very cooperative manner. They are lacking in value, however, because they give such limited interpretation to the word "health." This probably can be excused somewhat because physical or physiological health is so obvious. It is to be hoped that the near future will prescribe regulations governing the handling of children from the standpoint of emotional, mental, and social ills. All these are equally important in regard to their effect on the development of the child.

During the time the child is in the first, second, and third grades he is beginning to grow rapidly. Because sex differ-

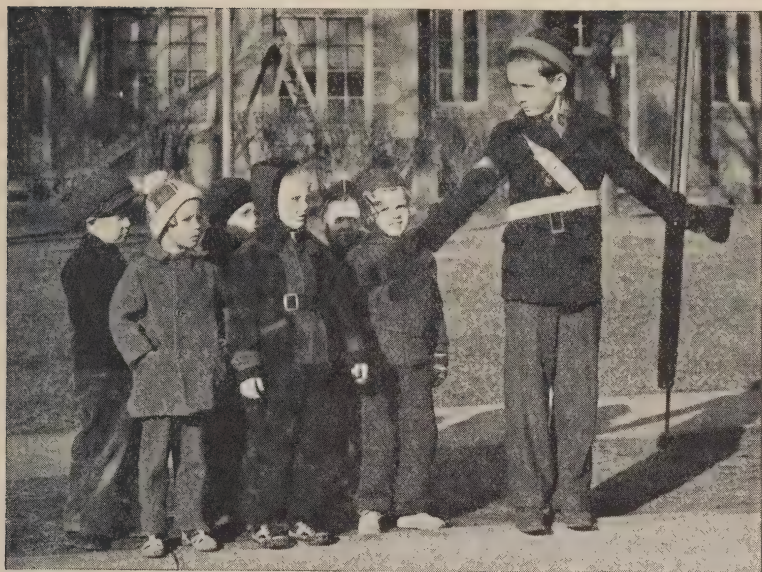
ences are slight, boys and girls need not be segregated in any free play, recreation periods, or physical education classes. This is the period when rhythms, singing, music, pageantry, can all be coordinated. Where this kind of organization can be developed in connection with unit activity, it is questionable whether a special physical education class is necessary. There should be some time for free play, which may well consist of nothing more than participation in the use of playground apparatus adapted to the interests and levels of maturity of the children concerned.

Children in the fourth, fifth, and sixth grades begin to show wide differentiation of maturity and the beginning of variety of interests. At this time games should take on a group coloring because children are beginning to feel the need of group security. Some separation of activity for boys and for girls is essential at this time, since some of the upper grade girls are entering the period of adolescence. It is undesirable, however, completely to separate boys and girls at these grade levels. Nevertheless, some separation should be made. Boys become interested in organized sports and girls will find an interest in dancing, dramatics, and pageantry.

Considerable separation of boys and girls can be made during the adolescent period. Girls will show an interest in individual sports and in dancing and dramatics, whereas boys develop strong urges for organized play. Some work together is desirable when and if it provides opportunities for social development. In some instances folk dancing will afford the means for bringing the two groups together. In other instances dramatics or pageantry is the answer.

II. SUPPLEMENTARY CONTENT

SAFETY EDUCATION. Metropolitan areas are beginning to pay considerable attention to general problems of safety. Industrialization and rapid transportation have done much to point out the need and the values to be derived from a program of safety education. This subject is mentioned here because of its importance; but because of its broad relationships, there is no particular need for the development of a separate content and the separation of that content from



Service on the school safety patrol is an exercise in responsibility.
(Courtesy of the Battle Creek, Michigan, Public Schools)

such areas as health, science, and the social studies. Safety education is implied in much of the work in these areas.

Well-constructed source units form the best basis for bringing problems of safety before a group. Such units can be developed cooperatively, utilizing all available persons both in and out of school. Much material available from commercial firms can be incorporated with these units. Films, especially, are available; they can be used with several grades or within a single grade where they supplement the study of a given unit.

Such units should consider safety instruction not only from the standpoint of the individual but from its implications for labor and industry. In other words, its social and economic implications are quite as important as its implications for personal safety.

CONSERVATION EDUCATION. In spite of its recent popularity and emphasis, conservation education is only a phase of the social studies. As a matter of fact the social studies are

never effectively taught unless they impress pupils with the need for caring for all kinds of natural resources.

Many states have developed departments of conservation, from which source material is usually available. It can easily be incorporated into units of study related to the community needs of the groups concerned.

This subject is highly important. It is unlikely that it will ever emerge as a special content class prescribed by state legislatures. It is desirable, however, to see its broad implications. In many instances problems of conservation will be key topics in unit activities.

III. IN CONCLUSION

The subjects treated in this chapter emphasize the importance of relationships between all elements in the school curriculum. Health cannot be taught separately but must be given consideration in all classes. Physical education classes may provide the opportunity for team games, but certain other areas provide opportunity for the creative self-expression which is so necessary for a healthy individual. A boy may star in athletics but it is in his science classes that his childish egoism is somewhat balanced by a feeling of humility as he comes to learn the vastness and complexity of the world about him.

Likewise the same point of view holds with such important topics as personal and group safety, and in conservation with its great and necessary content. Education for conservation, for safety, or for healthful living is intimately associated with all the activities and all the experiences of a given school and community. The point of view of this book is that the physical, the emotional, the intellectual, and the social are all aspects of living so closely united that it is not possible to separate them except for purposes of analysis and discussion.

SELECTED REFERENCES

1. CONRAD, H. E. *Education*. Philadelphia: W. B. Saunders Company, 1938.
2. DEKRUIF, PAUL H. *Health Is Wealth*. New York: Harcourt, Brace and Company, 1940.

3. EMERSON, WILLIAM R. P. *Health for the Having*. New York: The Macmillan Company, 1940.
4. FARGO, LUCILE F. *The Library in the School*. Chicago, Ill.: American Library Association, 1939.
5. MACMILLAN, ROBERT. *Safety Education in the Public Schools of the United States*. Philadelphia: Temple University, 1936.
6. NATIONAL SOCIETY FOR THE STUDY OF EDUCATION. *The Present Status of Safety Education*. Bloomington, Ill.: Public School Publishing Company, 1926.
7. WHITE HOUSE CONFERENCE ON CHILD HEALTH AND PROTECTION. *Safety Education in Schools*. New York: D. Appleton-Century Company, 1932.
8. WILLIAMS, J. F. *Methods and Materials of Health Education*. New York: T. Nelson and Sons, 1937.
9. *Forty-Second Year Book of the National Society for the Study of Education*. Part II: "The Library in General Education." Chicago: University of Chicago, Department of Education, 1943.
10. *Twentieth Year Book of the American Association of School Administrators*. "Health in Schools." Washington: National Education Association, 1942.

Part III

APPRAISING AND RECORDING GROWTH
AND LEARNING

Evaluation in the Elementary School

I. THE PROBLEM OF EVALUATION

THE MEANING of the word "evaluation" is much more comprehensive than "measurement" and "testing." Most standardized tests attempt to appraise amount of information, whereas the goal of evaluation is to determine such developments as social attitudes, character traits, and abilities to use information. As stated by Tyler, "All methods of evaluation involve four technical problems: defining the behavior to be evaluated, determining the situations in which it is expressed, developing a record of the behavior which takes place in these situations, and evaluating the recorded behavior."¹

Harris classifies evaluation activities under two headings: "One aims at achieving and pointing out values and deficiencies from the point of view of some given set of conditions or criteria coming from beyond the practice to be judged, whereas the other seeks to set forth possibilities in practice itself."²

At the present time the fundamental purpose of an evaluation program is to determine marks to be given, to collect information for the grouping and promotion of children, and to obtain information to be entered on report cards. Such a program places the emphasis on status and leaves untouched many important areas of growth and learn-

¹ TYLER, R. W. "Techniques for Evaluating Behavior." *Educational Research Bulletin*, XIII: 1-11. Jan. 17, 1934.

² HARRIS, PICKENS E. *The Curriculum and Cultural Change*. New York: D. Appleton-Century Company, 1937, p. 449.

ing. In a broad program, on the other hand, there are both major and minor purposes.

The most important of the major purposes is to make available information that will result in effective guidance of individual children. This of course implies a cumulative study of the child which will provide information on all significant aspects of his behavior.

The second major purpose is to provide information by which teachers and administrators may determine whether the school is contributing to the maximum development of the child. In other words, it is used to ascertain whether the school is doing what it professes to do. While the information may pertain to the child, the follow-up program under this category is concerned with changing the school and not directly the child.

A third purpose is to provide information by which teachers, parents, and students may appraise their efforts in the instructional offering. Not too many persons are content to teach without knowing whether they are or are not doing a satisfactory job, and teachers therefore have the tendency to emphasize the aspects of their responsibilities in which results can be easily seen. For example, it is easier to determine the percentage of children that can pass a county examination than it is to determine sensitivity to social problems. In contrast, the evaluation program, if broad, gives assurance to those who are attempting significant social goals.

Finally, evaluation is essential for public relations uses if instructional programs are to move in the direction outlined in this book. To institute and secure approval of curriculum changes, it is absolutely essential to establish cooperative relations with the community. Evidence is necessary to justify try-out programs; and to obtain such evidence is a fundamental responsibility of an evaluation program. Furthermore, such evidence must be widely publicized and used to inform patrons of results.

II. PRELIMINARY EVALUATION ACTIVITIES

Preliminary evaluation activities are those which give attention to aims, objectives, and methods. It seems trite to say that all schools should have definite working objectives,

and yet lack of agreement upon activities is characteristic of most schools. They may have aims but these are so lightly reflected in actual practice that they truthfully can be said to be nonexistent. Therefore proper initial evaluation activities must call for a clear, understandable formulation of desired outcomes.

A simple procedure is for the staff to go through a list of purposes and objectives and to indicate, after each one, specific means for obtaining data which can be used to determine whether that objective is being realized. In many instances it will be found that evidence is obtainable or that techniques can be designed for collecting it. If there is difficulty in other cases, the reason may be that necessary data can be obtained only over a long period, or that no techniques are practical and available for either short-time or long-time evaluation.

The latter difficulty will call for study and concentrated cooperative effort. It must be remembered that objectives should not be discarded simply because they are difficult to evaluate, nor should efforts be abandoned to obtain data in such areas. The thing to do is to keep on attempting to improve present devices and to invent new and better ones, rather than to throw away something that is inherently worth while. And also, there is no justification for overemphasis in areas that can be evaluated easily.

Much has been said in regard to making the child, rather than the subject, the center of the unit teaching. If the child is to be the core, evaluation must be made in terms of changes made in children; in other words, the child becomes the focal point in the evaluation program. Nevertheless it is necessary to develop situations for providing the necessary instructional environment for bringing about desirable changes. Therefore it is essential that the instructional program be made compatible with the aims to be achieved.

The needs of the individual and of society are constantly in a state of flux. Man is never satisfied, and democracy and society in a democracy require continuing attention. Thus evaluation is not a process of appraising educative effort in terms of permanent objectives but rather a process of matching practices to changing needs.

III. BASIC EVALUATION ACTIVITIES

Between the older and the new methods of appraising learning or learning activities there is a twofold relationship. First, techniques are usually evolved in terms of what a given idea or theory considers a significant outcome. The conventional one generally takes the form of achievement tests designed to measure adequacy of skill acquisition. Such evaluation is not difficult. Tests are developed in various learning areas, validated, designed to measure reliably, and then applied. Because of their construction, administration and scoring are simplified, and the results are available for appraisal. Today, however, because of diversity of aims and the intangibility of many outcomes, evaluation is more complicated. Nevertheless, the relationship is the same: evaluation in terms of outcome.

The second relationship reveals a converse aspect in that the techniques used for testing and evaluation frequently direct and dictate what is to be learned; the shortcomings of the evaluation program dictate the instructional program. For example, while we think that we are training pupils to think for themselves, we actually are doing little to further this ability in the instructional program because so far no one has been able to evaluate growth in the ability to think in abstract terms. It is obvious that in choosing basic evaluation activities this weakness should be avoided.

Measurement and observation data on children have been used in three different ways by teachers attempting evaluation activities. The first, one of the simplest and perhaps the best known, is the status study. The well-known profile is typical of this approach. By using the generally known statistical classifications such as percentiles, standard deviations, and growth or achievement ages, it is possible to plot deviations of individual intelligence, achievement, and aptitude in relation to a standard. A line drawn at the 50 percentile or at a zero deviation represents the norm, while the curve or path made by connecting the points representing the child's achievement makes up the profile. His profile is then interpreted in terms of deviations from the norm.

The second use of data collected by measurements is to

plot the growth of a child over a period of years. This technique is not so well known as the profile study but is one which teachers must learn to use. It provides opportunity to compare status at the moment with previous status, as well as a means for comparing status with norms or standards obtained from many children. Continued use of this technique, however, makes it possible to lean less and less on norms for interpretations. At present certain investigators have prepared common denominators by the use of which several types of data can be reduced to "growth ages."¹ A common base enables the teacher to relate such aspects of growth as physiological development, mental development, scholastic achievement, and behavior, to a standard base and thereby to study possible interrelationships of growth.

A third and highly specialized use of measurement data is that of appraising the relative effects of various factors upon the development of the child. It is questionable whether teachers with only the current general training and without adequate time for such studies can utilize these techniques in an evaluation program. The Harvard studies and the Iowa studies represent an attempt in this direction. The future will bring considerable development and improvement.

Many teachers probably doubt that it is possible in education and in child study to generalize laws of growth comparable to those in other scientific fields because child study is so young a science that it has not as yet had time to develop its own complex instruments of analysis. Using whatever was available, it has borrowed the instruments of the physical sciences, which can be used to best advantage only in static situations.

Growth, on the contrary, is dynamic rather than static.² It occurs as the result of interaction between the organism and its environment. It can be fully analyzed only when reduced to growth units and by techniques which will depend

¹ The disadvantage of using "growth ages" is recognized. Percentiles or units of the standard deviation are better measures for use as a standard base. The concept of "growth ages," though, is easier for teachers to understand and to compute.

² It is to be hoped that someone will soon attempt to determine whether what the physicist knows of dynamic systems can be applied to the child development field.

less and less upon the instruments it has heretofore borrowed. Such techniques as those of Courtis and Olson, which are characteristic of devices employed in the biological sciences, offer new opportunities for evaluation. Many teachers, however, believe that prediction and control in dealing with the child are impossible since many growth outcomes resist measurement; and there are many other teachers who do not wish accurate prediction and measurement. Nevertheless, scientific exactness in evaluation is a possibility for the future. Techniques are now available which enable the teacher to define, to point out how modifying conditions can be evaluated, and how interrelationships among various aspects of growth can be ascertained. To use these techniques it is essential to have practice and training, to be patient in demanding conclusions, and to study the child cumulatively over a considerable length of time.

IV. METHODS OF OBTAINING DATA

In carrying out an evaluation program in which the child is the focal point, one must be warned not to lose sight of the fact that the child represents a completeness, a oneness, or, what is an even more popular term, a wholeness of growth. Within himself each individual is a complete organic unit. He is not only a unit physiologically but he functions in his activities at all times as a unit. When we talk about physical development, mental development, or intellectual development, we are referring to only one aspect of this unity. When classifications and divisions are made, they are useful only in limiting discussion and providing direction for studying the child as a whole.

Child life from day to day moves through various developmental phases. When the child is born, one cycle of growth most dramatically comes to an end and a new one begins. Throughout all cycles of development many changes are produced by maturation and reflect themselves in changed velocities of growth. All the while there is a unity in the whole process. One division or cycle overlaps another; and in spite of the fact that it is as yet impossible to ascertain definite relationships between cycles, nevertheless a certain funda-



Interest on the part of the pupils is one test to apply in evaluation; note the intense concentration and interest shown on the face of this boy.

(Courtesy of the Battle Creek, Michigan, Public Schools)

mental individuality underlies the total pattern. All this brings a warning. The child must be studied in relation to what he was and to what he will be at any future time. And further, it must be remembered that each aspect of development, cycle, or special growth under consideration, is not only important in itself but is equally important in interpreting other aspects of development. This means that the character of a height curve, for example, has meaning for interpreting the mental growth curve. This idea contradicts the idea of relation computed by correlation techniques. When these aspects of development are seen in a perspective in terms of maturities, timing, and percentages of development, relationships can be observed which cannot be discovered accurately by correlations computed from cross-sectional data unless many variables are considered.

To insure breadth of study for broad evaluation, data should be collected by objective measures, journal records,

and personality inventories. These three approaches will insure a sufficiently wide collection of information to enable the evaluator to gain adequate insight into child growth needs and learning.

The argument for breadth of study as a basis for evaluation has been an outgrowth of the idea that every activity of the child is governed by the total organism. Further argument can be based upon another idea, the idea that development, learning, and adjustment are influenced by many other factors than those emanating within the school and its particular environs. Apparently this idea is accepted by imposing lists of teachers, educators, and administrators. The evidence for such a view is found in the utilization by school authorities of explorations, trips, and projects and units outside of school. Those who have studied the child in his total environment are beginning to be skeptical concerning the effect of the school alone in producing desirable change in individuals. As a result of these studies there is emerging a view which looks upon teaching as a process of directing child growth, providing guidance, helping the child to explore and to experience, and aiding him to generalize from his experiences. This viewpoint leads to the conclusion that evaluation activities based on a study of child growth and needs must be as broad as the total experiences and environment of the child.

OBJECTIVE MEASURES: *Rating Scales.* What is called "objective measures" refers to those devices for collecting information commonly known as rating scales, standardized check lists, achievement and intelligence tests, and physiological measurements. All these devices enable the investigator objectively to evaluate important behavior and personality characteristics. Aptitude tests, personality measures, and economic-social environmental status measures are only a few examples of rating scales. Most measures of this type are limited to defining status, either that of the child's environment or of his personality.

Aptitude tests potentially show great possibilities. However, they should be used cautiously. Our errors in the use of intelligence tests have been made so apparent to all that they should restrain us from making similar errors in connection

with aptitude tests. At present it is not quite clear whether aptitude tests measure special abilities or whether they measure previous conditioning and experiences of the child. Only further experimentation will answer this question. Generally speaking, reliable aptitude tests have not been developed for use with elementary school children nor can they be administered early in the child's career and then given again and again in order to determine the maturing pattern of a trait or skill. Only when these weaknesses are overcome and the tests become available for such use can they be considered reliable and valid measures comparable in analytical possibilities to achievement and intelligence measuring techniques. When this time comes, the use of aptitude tests will enable the evaluator to analyze a skill or aptitude or conditioning, in terms of growth as well as of status. Such investigators as Thurstone are already working in this direction.

This whole group of tests, at the present time, does not lend itself to growth treatment as implied by changing scores from one period to another. Such tests can be used only to supplement other studies of the child. For example, although they cannot depict growth, they can aid in defining the conditions under which growth takes place and for this purpose they should be used periodically. Changes in the curve of development in some other aspect of growth might be explained by changed status in one of those classifications. Economic shifting, as measured by economic-social status measures, might explain a temporary plateau or depression occurring at a given time.

Check Lists. It can be questioned whether check lists are any different from rating scales. The reason for separating them is that certain types of rating scales are neither strictly objective nor strictly subjective. "Time-sampling" studies, which can be objectified by psycho-physical methods, are an illustration. Such techniques make it possible for the investigator to record, for instance, "how many times" a certain type of behavior occurs in certain defined situations. The techniques are relatively new and not too generally used. They offer possibilities for growth treatment to the extent that a diminishing score indicates increasing maturity or conversely, in certain scales, to the extent that positive aspects

of mature behavior can be observed cumulatively and are reflected in increasing scores.

Achievement and Intelligence Tests. At present the most reliable and valid of so-called tests and scales are achievement and intelligence tests. Achievement tests have been developed for a wide range of subject-matter classifications—reading, spelling, arithmetic, language, English, science, and a host of other categories.

All these, including the intelligence test, although it is not generally so utilized, lend themselves to cumulative treatment. In other words, they may be given over and over, in different but equivalent forms, and the ensuing scores plotted as a curve. In this connection, a point may be made which is pertinent: caution should be exercised in the selection of intelligence and achievement tests, and in weighing the reliability and validity of the tests and the adequacy of the norms. When a certain satisfactory test has been adopted, it should be used throughout the school career of the child for those grades for which it was constructed. Obviously, those tests only should be selected which have sufficient multiple forms to provide adequate rotation and thereby eliminate the possibility of having children learn the items through continued testing. The converse of this argument is that a shift from one battery of tests to another throughout the child's career in school makes it difficult to treat results adequately in terms of growth.

In spite of many objections the standardized intelligence test is a basic and fundamental measure in an evaluation program. Many criticisms have been directed against it, but when examined most of these are found to be criticisms of the way untrained teachers use the results. The advice regarding the selection of achievement tests in an evaluation program applies equally to the selection of intelligence tests.

Perhaps a word is also pertinent regarding the comparative advantages and disadvantages of the individual versus the group intelligence test. It seems fairly accurate to say that the advantage so often cited in favor of the individual tests is mostly a difference in ability of the testers who use them. Teachers without adequate training seem to feel they can handle a group testing situation better than one involving an

individual test, whereas trained personnel are more likely to use the individual test. With trained testers in both situations, one would have to grant that the conditions under which the individual test is given are much easier to control and results are more likely to be reliable if the proper rapport can be secured. Another advantage in favor of the individual test, and one that is really significant in a school situation in which breadth of study of the child is desired, is the interview opportunity in the individual testing. It cannot be denied that, without consuming much extra time, individualized mental testing provides a maximum opportunity for a general interview and for noting general reaction as well as for measuring mental age.

Where the time required for frequent individual testing of the same children is not available, group testing is fairly satisfactory. It would not be out of order, however, nor would the suggestion be contrary to the advice already given, to insert occasionally an individual testing where mental age is being studied cumulatively with group tests.

Physiological Measurements. Health and physical development data are, obviously, objective measures. Such records are not only valuable for studying health and physical development but for providing data for a complete analysis of the child. In this connection cumulative data on height and weight are important. Growth curves from these data can be graphed and comparisons made with curves of other aspects of development. The complete data should not be studied merely for differences in relation to norms, but to determine interrelationships and other growth phenomena.

General health and physical examination data, although objective, cannot of course be plotted on a curve. Attempts have been made by some child development centers such as the one at the Merrill-Palmer School at Detroit, to present the data in other ways. These data are essential, however, and can be used in explaining deviations in the general pattern of the child's development. Aspects to observe are the following:¹

¹ EVANS, ALICE, and others. *Teacher Observation of Health Conditions of School Children* (Bulletin No. 325). Lansing, Mich.: Department of Public Instruction, State of Michigan, 1945, pp. 9-16.

- A. Pertinent family situations
- B. Physical health conditions
 - 1. Evidences of good physical health
 - 2. Variations from good conditions
 - a. Growth
 - b. Nutrition
 - c. Communicable disease control
 - d. Immunization and disease history
 - e. Vision
 - f. Hearing
 - g. Mouth hygiene and dental condition
 - h. Nose
 - i. Tonsils
 - j. Lymph glands
 - k. Thyroid
 - l. Heart and lungs
 - m. Skin
 - n. Crippled condition
 - o. Speech defects
 - p. Nervous symptoms

Other scales and inventories are available for evaluation purposes which do not readily lend themselves to classification under the categories previously mentioned. These measures include techniques for defining interests, for determining adjustment status, and for measuring attitudes, appreciations, and such qualities as sensitivity to social problems. The scales are valuable for securing supplementary data regarding status and, to a limited degree, for aid in appraising the maturity of the child. Because they have been developed primarily for upper grade children they lack potentialities for cumulative testing and the ensuing possibilities of appraising developmental status.

JOURNAL RECORDS. The best possible subjective device for supplementing and clarifying objective data on growth and development is the Journal Record. It also provides the source material from which the teacher can make deductions concerning the impact of the child's personality on others, a value which cannot be found in any other technique. Furthermore, since Journals are cumulative, they can be used to interpret the child at any point in his development. We must, however, give warning that adequate keeping of

Journal Records consumes much time and that plans for using them must be well organized.

As expressed by Brown and Martin, the purposes of the Journal are as follows:¹

1. To furnish a variety of descriptions about students in specific and diverse situations. This purpose contributes to the generally accepted criterion of good cumulative records . . . that they should be based upon multiplicity of evidence.

2. To substitute for vague generalizations about students, specific, exact descriptions of behavior. One has to live in a public school only a short time to appreciate the devastating tendency of teachers to put children into categories by such general statements as: "he makes no effort," "he is indifferent," "she is lazy," "she is a fine person," "he is cooperative." *When* does he make no effort? Indifferent to *what*? *How* does she express laziness? Fine for *what*? Cooperates *when*? *How*? *With whom*? In one class, under the specific conditions that obtain there, a student may exhibit evidences of indifference; in the next hour he may behave as though his whole being were wrapped up in accomplishing the work before him. It is far more important for the teachers in each of the classes to know what his behavior is under varying circumstances than to attempt to generalize upon one impression based upon one incident or on one isolated set of facts.

3. To stimulate teachers to use records and to contribute to the records of students, to look for information that is pertinent to the fundamental goal of every classroom teacher . . . that of helping each student make optimum progress under the best possible conditions.

4. To contribute toward understanding the "core" or basic personality pattern which may be revealed over a period of time and under varying conditions. Characteristics may be obscured unless, through repeated recordings, the same general pattern emerges over and over again.

PERSONALITY INVENTORIES. *Complete Case Study*. The Personality Inventory is a complete case study of the child which should be made several times during his school career. It should summarize and bring into a single picture all data available from the study techniques already described and should add some new data of its own. It thus provides an

¹ BROWN, M., and MARTIN, V. "Anecdotal Records of Pupil Behavior." *California Journal of Secondary Education*, XIII: 205-208. April, 1938.

up-to-date appraisal of the child. It should follow an interpretative bent and be characterized by an integration of all kinds of information. It should also recommend procedures and policies to be used by teachers in dealing with the child in his environment. The "biogram" used by the Merrill-Palmer School is a good example of a complete case study.

A preferred outline will be patterned on a classification similar to the following:¹

- A. School history
 - 1. General information
 - 2. Special talents and interests
 - 3. Academic record
- B. Physical efficiency and health
 - 1. Birth and early development
 - 2. General health
 - 3. Physical characteristics
 - 4. Special physical abilities and possibilities
- C. Home environment
 - 1. General picture
 - 2. Parental influences
 - 3. Home influences
- D. Work traits
 - 1. Study habits
 - 2. Work habits
 - 3. Mental characteristics
 - 4. Mental functioning
- E. Personal habits and traits
 - 1. General rating
 - 2. Character and ideals
- F. Personal adjustment
 - 1. Adjustment inventory
 - 2. Emotional characteristics
 - 3. Social characteristics
- G. Measurement analysis
 - 1. Height and weight
 - 2. Achievement

¹ A booklet with a page devoted to each subdivision in the outline plus approximately twenty-five blank Journals, to which past Journal data can be transferred, will be found very helpful.

3. Mental age

4. Aptitudes

H. Journal record

Most of the recommended study outlines, including the preceding, are developed in child study experimental and research laboratories. The approach of the classroom teacher need not and cannot be so detailed. She has neither time nor facilities to discover such comprehensive data. The outline and the techniques implied in completing it give assistance, with the following qualifications:

1. None of the items or classifications are important in themselves nor is one item more important than another; and any one grouping of items may be significant for one child but not for another.

2. The word-pictures used with each sub-classification are intended as possible leads, to stimulate and to broaden observation of the child.

3. No one item is necessarily complete in itself and frequently it may be necessary to direct by foot-note reference to a supplementary statement on the child in a Journal Record.

Limited Case Study. In an evaluation program which considers the child as its focal point, it is essential that all files and data on an individual should facilitate a periodic complete interpretation of that child. Nevertheless, it is not essential that a case study be initiated by the question, "How shall I make a complete case study of Johnny?" A study of any child can be started at any time and within the limits of development presented by a specific problem. Some evaluation problems require only short, abbreviated observations and study. For example, a given child may be having difficulty in reading. If he is in the first or second grade, examination of the curriculum program itself may make it clear that there is little relationship between the offering and the needs of the child. Attention then would be directed toward changing the program rather than the child. If he happens to have a real reading difficulty, the evaluation will show what it is and the steps to be taken in correcting it. The point is that the case can be finished at any

time without instituting an inclusive and elaborate study of the total individual and his environment. It is essential, however, that when brief informal studies are made they should be recorded and made available as data for complete studies.

V. IN CONCLUSION

Growth data and the techniques for collecting data for appraising growth, adjustment, and learning are basic in any evaluation program. Consecutive measurements of growth offer opportunities for analysis and for evaluative conclusions which were undreamed of even a few years ago.

Proper techniques for studying data on children offer opportunities not only to evaluators interested in certain specialized aspects of behavior but likewise to those interested in improving the total instructional offering to better meet the needs of children. Such studies will also demonstrate the futility of stimulating the child beyond his physiological-social maturity level and will show further the effect of such stimulation in ensuing inhibitions and negative attitudes.

It is true that complete techniques for studying children and for evaluating instructional programs in terms of the outcomes of such studies are beyond the facilities of the average school. If this were not true, there would be no progress and it is desirable that specialists in evaluation constantly strive toward newer and better techniques. Progress in the application of these facilities is constantly being made and will continue in the future.

This is not to say that our current techniques are entirely adequate. Educational research is approximately only fifty years old, and most of it has been directed toward measuring reactions of children in subject-matter situations. At present, relatively little is known about the measurement of attitudes from the growth point of view or the measurement of abilities in social living, group cooperation, and creative expression. Thus we still have far to go. Adequate child interpretation and its implications for instructional evaluation require constant research and study. Only in constant progress at this level and at the school level in its applications will there develop adequate appraisal and evaluational techniques.

SELECTED REFERENCES

1. BROOM, M. E. *Educational Measurements in the Elementary School*. New York: McGraw-Hill Company, 1939.
2. EVANS, ALICE, and others. *Teacher Observation of Health Conditions of School Children* (Bulletin No. 325). Lansing, Mich.: Department of Public Instruction, State of Michigan, 1945.
3. HARRIS, PICKENS E. *The Curriculum and Cultural Change*. New York: D. Appleton-Century Company, 1937.
4. WRIGHTSTONE, J. WAYNE. *Appraisal of Newer Elementary School Practices*. New York: Bureau of Publications, Teachers College, Columbia University, 1938.

14

Evaluative Aids

THE PURPOSE of this chapter is to elaborate upon some of the devices mentioned previously and to point out ways and means by which certain of these evaluative aids can be efficiently used. Those included for description are:

- I. The Journal Record
- II. The Daily Program Log
- III. The Educational Profile
- IV. The Growth Analysis
- V. The Personality Inventory
- VI. The Health Record

I. THE JOURNAL RECORD

The Journal Record, sometimes called the Behavior Journal, or the Anecdotal Record, is designed primarily to provide a chronological record of significant behavior. This includes emotional, physiological, sociological, intellectual, and all other aspects of behavior. It is written by all teachers as called for, usually informally, and used by all in studying the development of a given child. In a way it represents the main line for measuring the effect of reactions of the child on other people and the reactions of others on him. It does not represent a substitute for any other record, such as test scores or measures of background, but when used adequately with these measures it will assist in the over-all interpretation of the child.

Journals are cumulative and should be available for interpreting the child at any stage of his development. In this sense they render important aid in an evaluation program. According to Olson:

The Behavior Journal is designed for the maintenance of a chronological record of significant items of behavior concerning a child, of recommendations for the educational or treatment program, of steps taken to put these into effect, and of the results secured.

Several investigators suggest that one of the valuable methods of locating children who are problems, or potential problems, is simply to keep a chronological record of the types of behavior which call for special attention on the part of workers in the school. This natural history approach gradually defines the extent and nature of the problem in particular children. Such a record has the further advantage of offering many possible uses by principals, teachers, and others, since the cumulative record furnishes an excellent basis for interviews with child or parent and for planning adjustment work. Early discovery, followed by treatment looking forward to prevention of more serious developments, should be one of the objectives of the record keeping.

On the positive side the record may be used to note constructive things about the child, such as election to offices, contributions to the work of the room, special achievement in writing or dramatic art, and striking illustrations of ability to work with or to lead others. Both constructive incidents and behavior problem items are needed for the most effective guidance work with children.¹

Stated in another way:²

These are brief records of observations, interviews, comments, quotations from written work, and the like, which reveal significant tendencies in pupil development, especially toward the objectives of the school. They contain a short, clear, objective, accurate account of something the pupil said or did that throws light on some aspect of his development. Any necessary interpretation of the incident is rigidly separated from the account of what happened; otherwise teachers tend to substitute their impression for the evidence. For samples of good anecdotes, consult the four Gospels. Anecdotes are difficult to obtain from teachers in the limited time at their disposal, but progress toward many important objectives can as

¹ OLSON, W. H., from directions regarding writing of Journals to teachers of University of Michigan Elementary School, Ann Arbor.

² DIEDERICK, P. B. "Evaluation Records." *Educational Method*. XV: 432-440. May 15, 1936.

yet be evaluated only in this way. Fortunately many schools are assisted by apprentice teachers, and the anecdotal record is an excellent teacher-training device for focusing attention upon individual needs and problems. Once the habit of writing anecdotes is acquired, it is not easily discarded because it has such a stimulating effect upon the teacher's awareness of his pupils as individuals.

The completeness of the record will depend upon the insight of the teacher and her interest in developing one that will be really significant in interpreting the child. Likewise the utilization of such records will be a factor in determining whether the teacher will feel that they are worth while or not.

One technique for keeping a Journal is to have the teacher provide herself with a blank Journal for each child in her room; another is to have loose blanks available as needed. The latter would presuppose the filing of one or possibly two Journals a day. Teachers do not have much time and generally will not discover more than one or two instances of significant behavior throughout an ordinary school day.

There are no fixed answers to such questions as "What shall I record?" and "How much shall I record?" Sometimes the inspiration for a memorandum will come through a contact with the parents by phone or by interview or by note; sometimes it will come through a conference with the school principal about a child, or with another classroom teacher, or with a special teacher. Recommended procedures are worth recording.

Playground, special room, clinical reactions, and other situations may uncover further significant material. An entry based upon reports from other people should indicate such origin. Under no instances should a Journal be written while an interview is in progress; it should always follow in order to eliminate self-consciousness and ensure spontaneous reaction during the interview. Entries should be as specific as the teacher can make them and should also avoid triteness.

The use of the Personality Inventory along with the Journal eliminates the bad practice of presenting character sketches without substantiating detail. Certain pages of the Personality Inventory will note that a given child is, let us say, overactive or withdrawn or fearful; the Journal, then,

will substantiate these generalizations with specific descriptions of behavior which justify them.

Remarks of the child that are indicative of attitudes are valuable for recording. Such statements as "I hate school" or "I would rather read than play ball," are significant because they provide a key to the child's interests and attitudes. Cooperative participation in group projects, election to class offices, individual performances, and special talents all deserve recording.

The teacher will find the following specific suggestions helpful:

a. Write brief, objective descriptions, with interpretations when possible.

b. Choose any pupil toward whom your attention has been directed by some incident. Perhaps it is typical and for that reason needs recording, thereby substantiating your general view. Or perhaps it is unusual and should be recorded for that reason. By all means develop as much breadth as possible throughout the year in recording data on a given child. Don't play up your pet grievances!

c. Include some information which will provide a background for the episode so that your recording will be intelligible to someone else or to you at a later date.

d. If other records are used for dates of illnesses, physical examinations, etc., use the Journal to record attitudes in connection with such experiences. If other records are not so used, record illnesses, absences, and the reasons for them.

e. Record individual remedial treatment and its results, corrective exercises, and the like.

f. At the beginning of the year, when new relationships are developing and significant incidents are slow in emerging, record interviews with children regarding their interests, summer experiences, etc.

The following Journals written by teachers will illustrate some of these points.

No. I (SAMPLE OF GENERAL ANALYSIS)

JOURNAL RECORD

<i>Incident and Setting</i>	<i>Commentary, Findings, Etc.</i>
Interview between Child and Teacher	<p>Jackie says she likes to play house with her dolls. She also stated a preference for paper dolls, as she likes to draw, color, and cut out clothes for them.</p> <p>I asked Jackie what she would like to be or do when she grew up. She thought a long time and then said she didn't know, she'd have to wait until she grew up. As an afterthought she added that if we were still fighting a war she would like to be an army nurse.</p>
General Reaction of Child	In regard to play, fun, or social activities, Jackie is always far ahead in regard to initiative. In the classroom she is very conservative and seems to shrink from anything new that is introduced.
General Personality Type	Although not fully developed yet, I do believe that Jackie will have an extravert personality. She's fond of being the leader in group play and she is quite anxious to meet new children and people. She certainly isn't timid or shy.
Not Shy	
Draws Attention	Usually Jackie works very effectively and is not easily distracted by the usual classroom disturbances. She always tries to attract attention when a messenger or visitor comes into the room.

Date of Observation: May 16
Where Observed: Home Room

Name: X
Grade: 1

NOTE: General analytical Journal unrelated to a specific situation within the classroom.

No. II (SAMPLE OF GENERAL ANALYSIS)

JOURNAL RECORD

<i>Incident and Setting</i>	<i>Commentary, Findings, Etc.</i>
Home Visitation	<p>The grammar used in the home by Delbert's parents is very poor and probably accounts for his poor grammar usage in school. His mother used such terms as, "Fetch me the book," and "I come across it."</p>
Parent Attitude	<p>His mother seemed to take quite an antagonistic attitude toward the school, criticising it because "there is no religious training given." The lack of religious training was used by the mother as an excuse for Delbert's poor work in school.</p> <p>While I was visiting with his mother, Delbert was moving about the house. When he did not follow his mother's commands, she shouted at him in almost a hysterical manner and at one time called him into the room, grasping his arm in a rough jerking manner. Obviously his mother is very domineering in her dealings with him.</p> <p>The interest of the mother in Delbert's school activities is very limited. When asked if she had seen any of Delbert's work recently, she replied, "I have been too busy to look over the papers that he has been bringing home lately."</p>
Parent Health	<p>Delbert's mother looks anemic. This is probably because she is expecting another child. She plans to work this summer, regardless, and appears very nervous and high strung.</p>

Date of Observation: April 19

Name: X

Where Observed: Home

Grade: 2

NOTE: General analytical Journal attempting to record conditions under which child lives at home.

No. III (SAMPLE OF GENERAL ANALYSIS)

JOURNAL RECORD

<i>Incident and Setting</i>	<i>Commentary, Findings, Etc.</i>
Art Work	<p>Some work was introduced using colored paper, the first this class had done.</p> <p>In helping the children I approached Gail, the little girl around the corner of the table from Dick, where she was trying to make a paper handle for a basket pasted on a piece of paper. Dick watched me cut it in two and take a piece out of the corners to make it smaller. In a few minutes I came back to find him trying to paste a two-pieced handle on his basket. He had missed the instructions for cutting folded paper and had cut the pieces separately.</p>
Dependent upon Others	<p>I think Dick is quick to initiate, even though he doesn't completely understand why he is doing it. He quickly took advantage of my attention and asked me to help him. He will depend upon adults if they permit it. I suggested he draw the leaves for the flowers in his basket before cutting them out. He proceeded to do this but asked me to paste them down. When I refused, he decided not to have leaves.</p>

Date of Observation: April 25*Name:* X*Where Observed:* Home Room*Grade:* I

NOTE: General analytical Journal related to specific incidents in the school day.

No. IV (SAMPLE OF SPECIFIC ANALYSIS)

JOURNAL RECORD

<i>Incident and Setting</i>	<i>Commentary, Findings, Etc.</i>																				
<p>Kuhlmann-Anderson Intelligence Test</p> <p>Group Testing Tests (M.A.)</p> <table><tr><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr><tr><td>6-11</td><td>6-7</td><td>X</td><td>7-5</td><td>6-0</td></tr></table> <p>Tests (M.A.)</p> <table><tr><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td></tr><tr><td>6-11</td><td>5-11</td><td>8-0</td><td>X</td><td>6-1</td></tr></table> <p>Average M.A. 6-9 C.A. 7-0 I.Q. 96</p> <p>Cooperation</p> <p>General Attitude toward the Test</p>	4	5	6	7	8	6-11	6-7	X	7-5	6-0	9	10	11	12	13	6-11	5-11	8-0	X	6-1	<p>The first actual test for this grade level was number four.</p> <p>Lucy listed highest on the tests involving visual discrimination, recognizing likenesses and differences and associations. On these three her mental age was 7 years and 5 months. Her lowest score was on the test on pattern completion, in which she obtained a zero score. On this test a pattern of lines was flashed and the child was asked to reproduce it in the blank spaces provided. It appeared as if she failed to understand the directions. On following directions and on tests involving visual memory she also tested low.</p> <p>Lucy seemed very interested in the test and cooperated well. In one of the sample exercises, when the children were asked to put a "dot" on the top of the page, she looked around to see how the other children were doing it.</p> <p>In general Lucy gave the impression of following the general test directions quite well. A few times she glanced around to see what other children were doing, but in general did her own work without sign of fear or pressure.</p>
4	5	6	7	8																	
6-11	6-7	X	7-5	6-0																	
9	10	11	12	13																	
6-11	5-11	8-0	X	6-1																	

Date of Observation: March 7

Name: X

Where Observed: Home Room

Grade: I

NOTE: An attempt to analyze specific test scores to determine high and low points in aspects of intelligence.

No. V (SAMPLE OF SPECIFIC ANALYSIS)

JOURNAL RECORD

<i>Incident and Setting</i>					<i>Commentary, Findings, Etc.</i>
Analysis of Height and Weight					<p>In studying height and weight data from two different observations, Emogene appears to be about normal.</p> <p>Her weight quotients for the two periods vary from 1.10 to .97. The difference between the two quotients is somewhat startling at first but obviously is the result of only a slight variation in the child's weight. Unfortunately the general health condition at the time of the observations was not available.</p> <p>The same drop in quotient is noticeable here as in her weight quotients. Apparently this agreement indicates normal deviation from a so-called standard height.</p> <p>Theoretically it may be assumed that a ratio between a child's weight and height quotients should give some indication as to body build. In other words an "over-weight" child might normally be expected to be above average height. This is the case in regard to Emogene. At sixty months of age she has a body-build ratio of 1.02 and at seventy-one months, a ratio of 1.03.</p>
Weight Data					
C.A.	Wt.	Wt. Age	Wt. Q.		
60	37.5	66	1.10		
71	38.75	69	.97		
Height Data					
C.A.	Ht.	Ht. Age	Ht. Q.		
60	42.75	68	1.13		
71	43.5	71	1.00		
Body Build Ratios					
C.A.	Ht. Q.	Wt. Q.	Ratio		
60	1.13	1.10	1.02		
71	1.00	.97	1.03		

Date of Observation: May 2

Name: X

Where Observed: X

Grade: 1

NOTE: This analysis represents an attempt to compare heights and weights of the child in terms of the child's own development.

No. VI (SAMPLE OF WORK)

JOURNAL RECORD

<i>Incident and Setting</i>	<i>Commentary, Findings, Etc.</i>
<p>Art-Class Activity</p>	<p>Dick erased his first attempt to make a drawing and then drew a boat in a hail-storm. The circles that cover the paper are hailstones. Above the air which contains the storm is a line between the air and the sky with three clouds in it, a typical child's conception of the division of the elements. The large blue object in the water is a floating hailstone. In regard to the rest of the picture, Dick had the following comment, "Aren't I crazy to put a moon on top of the flagpole?"</p> <p>The coloring on the back of the picture was done with the help of a boy from the next table. When Dick accidentally poked a hole in the flag, I asked him if it was a bullet hole.</p>
<p>Analysis of Activity</p>	<p>The page is well filled out and the drawing was quite spontaneous, although the subject matter is probably a common one to Dick and therefore shows but little creativity. The first part of the drawing was carefully done, but I think Dick was more interested in the emotional outlet that he received from making it than in the results on the paper.</p> <p>He placed several other "bullet holes" in his picture and would have completely destroyed it if I had not asked for it.</p>

Date of Observation: May 17

Name: X

Where Observed: Home Room

Grade: 2

NOTE: Attaching samples of work to Journals is a fine way to note certain aspects of development of the child.

JOURNAL RECORD

<i>Incident and Setting</i>	<i>Commentary, Findings, Etc.</i>
<p>Handwriting Sample from Spelling Paper (or Arithmetic)</p>	<p>Charles seems to write quite legibly for a boy of his age.</p> <p>It is obvious that he presses rather hard when he writes, but is fairly accurate in the formation of his letters. In comparison with other children his work is quite mature. However, his writing is quite large but this is probably more desirable than to press him to write in smaller, cramped letters.</p> <p>He reversed several letters but noticed them himself, erased them, and wrote them correctly. The turned ends of the f's and t's indicate that he is quite particular about his work and is pleased by his results.</p> <p>Incidentally, these words written from dictation in a spelling lesson are all correctly spelled.</p>

Date of Observation: May 24
Where Observed: Home Room

Name: X
Grade: 2

NOTE: Another illustration of the value of preserving samples of work for Journal study.

II. THE DAILY PROGRAM LOG

The Program Log is an evaluation device that has been almost completely ignored. Elasticity has been developed in many school programs through the broad core-subject area and the source unit; the Program Log is another device for this purpose. In a way, it is a good-housekeeping device. It records what happened rather than what should happen or what someone thinks will happen. It is therefore a much better administrative device than a lesson plan made out a day, a week, and sometimes even a month in advance. It is better because it presents a realistic picture of what actually happened rather than the guess or hunch inherent in pre-written lesson plans.

The main value of the Log is that it provides a means for creating an accurate, analytical picture of a given school day of a group without restricting activities in the slightest way. Through a sequence of Logs for a month or a year an instructional program may be accurately accounted for and at the same time instructional development may be fitted to the needs of boys and girls as they reveal themselves.

The plea is constantly being made for larger blocks of time for learning activities. The Log, with its time divisions devoted to various activities written in afterward instead of before, does just this. It makes possible an unexpected extension of time whenever that is regarded as desirable. It also makes possible a record of activities in terms of the things children do rather than in terms of a given theme or subject-matter heading.

The use of the Program Log implies continuity of learning experiences throughout the school day and from one day to another. Within limits, the activities of a given group should represent a smooth progress from one activity to another, matching as closely as possible the social life of a given group in a given community. If teachers as individuals had the power to foresee accurately, the conventional lesson plans would be satisfactory and adequate. Because teachers are not omniscient, it becomes necessary to observe and to record as things happen. The job of the teacher becomes one of directing and assisting in every way so that activities will

unfold naturally. The purpose of the Log becomes one of picturing the continuity (or the lack of it) so that it can be clear to all those appraising the instructional program.

What better plan is available for making an evaluation of the extent to which the daily instructional program is meeting the growth and learning needs of boys and girls? In an experimental school, in an ordinary school which wishes to improve its program through research and study of its current offerings, or in a school ready to try out instructional innovations, the use of the Log makes available a source of information for evaluative purposes. Curriculum research is provided with data, and over a period of years a comparison of growth records with instructional situations is possible.

Specifically, evaluation is facilitated as follows. The use of Logs provides an opportunity to study the following:

1. To what extent planning and appraisal activities on the part of a given group of children are actually being carried out
2. To what extent continuity and breadth can be developed in the core areas and to what extent one unit grows into another
3. To what extent individual interests and activities grow out of unit activities or are motivated by other interests
4. To what extent skill learning can be made functional and a means to an end
5. To what extent special classes contribute to unit activity and to what extent they represent isolated interests
6. To what extent isolated skill teaching is carried on and to what extent it is "necessary."

Curriculum trends within a given grade or within a total school system may be noted by studying Logs over a period of years. No other evidence can be so useful in determining the extent to which the school is directing its effort toward meeting its objectives.

In developing a form to be used, certain characteristics should evolve. Among the most important of these are the following:

1. The Log should be concise and easy to make out, and still retain accurate picturization of a day's activities.

2. It should be slightly directive in its nature; in other words, it must have categories under which activities are to be recorded.

3. It should be developed with categories which are in agreement with the objectives of the school and developed cooperatively by those expected to use it.

4. It should provide sufficient elasticity and breadth to be used by teachers with varying backgrounds and stages of development in their thinking.

Since the Log is to be made out daily, it is essential that it be brief and yet provide an accurate picture of the activities of a given school day. Further, it should be of such a nature as to motivate teachers to develop a program leading toward desirable outcomes and objectives. On the other hand, the form should not be too directive; that is, it should enable teachers who lack ability to develop a program around core areas to record classes separately where it seems desirable.

Taking these points into consideration, the following categories have been found satisfactory:

1. Planning and appraisal activities
2. Unit development, group interests and activities
3. Individual interests and activities
 - (a) Outgrowth of unit
 - (b) Isolated interests
4. Utilization of skill subjects
5. Special-class and out-of-room activity
6. Isolated teaching of skills.

Since the Log represents a means for recording a program which seeks to provide elasticity, it is desirable that individual techniques be developed for recording activities and that the manner of writing be prevented from becoming uniform. Therefore, instead of providing too specific directions, directions which would tend to rule out individual creativeness, it seems advisable for us here to provide suggestions and illustrations only.

*For Planning and Appraisal Activities*Don't Do Too Much of
This!

1. Planned day's work.
2. Discussed what we would do today.
3. Plans for making more doll furniture.
4. Appraisal.
5. Planning.
6. Budgeted time.

Do More of This!

1. Review of vacation experiences, Easter at home, and experiences during the week.
2. Plan of day's work: telling library story; hearing about Kent's train ride alone; material for newspaper read to the group for approval.
3. Costumes for play were discussed. Planned to write column for paper and some letters about our trip.
4. Appraisal discussions concerning care of materials, attitudes, ability to carry out plans and responsibilities.
5. Made plans for designs for transportation models.
6. Children decided that a fine job had been done on the mural. Only criticism was with the frame.

Comment: Be fully illustrative in part rather than sketchy in the total situation. Try to show outstanding examples of planning rather than planning as a part of a routine.

*For Unit Development*Don't Do Too Much of
This!

1. Activity Period.

Do More of This!

1. Talked about the kind of store and continued work by putting on the roof.

For Unit Development — Continued

Don't Do Too Much of
This!

Do More of This

- | | |
|-----------------------|---|
| 2. Source Reading. | 2. Source reading and discussion about Bedouins. Also read about work done by Indian men, women, and children. |
| 3. Assembly Practice. | 3. Designed the properties needed for William Tell play; racks were made from cardboard boxes, and apples from stuffed cloth. |
| 4. Field Trip. | 4. Field trip to observe different kinds of transportation. |
| 5. Studied Industry. | 5. Review of industries of South America for help in completing mural. |

Comment: Place emphasis here on what was done, showing activities and enough detail to gain a picture of the over-all topic.

For Individual Interests

Don't Do Too Much of
This!

Do More of This!

- | | |
|-------------------------|--|
| 1. Free Activity. | 1. One group painted at easel, another played with dolls, some worked on song. |
| 2. Elective Activities. | 2. Arranged the freight train for display, worked on mural, cleaned aquarium. |
| 3. Special Interests. | 3. Worked on boat models, mural, some read. |

Comment: List activities, not names of children. For special individual activity use Journal Record. Show both small group and individual activity.

For Utilization of Skill Subjects

Don't Do Too Much of
This!

Do More of This!

1. Numbers.

1. Numbers — counted out cabbage plants and measured distance necessary between plants.

2. Spelling.

2. Spelling — words were copied from social science material which children listed as necessary to learn to spell.

3. Arithmetic.

3. Arithmetic — in papering doll house, measured size of paper necessary; used $\frac{1}{2}$ and $\frac{1}{4}$ in measuring ingredients for paste.

Comment: Purpose here is to point out by defining the type of activity whether or not it has any relationship with general unit activity.

For Isolated Skill Teaching

Don't Do Too Much of
This!

Do More of This!

1. Reading.

1. Reading to improve comprehension.

2. Arithmetic.

2. Learning to carry numbers in addition.

3. Language.

3. Learning how to punctuate simple sentences.

4. Handwriting.

4. Learning to write capital letters.

Comment: Recording under this category assumes non-relationship to unit activity. It is essential that specific skill activities be listed for determining reasons for lack of relationship to unit activity.

In order to give a further picture of log-writing several samples written by teachers are included here:

DAILY LOG

Grade: III
Teacher: X

Date: Sept. 21
Unit: Milk.

TIME PLANNING AND APPRAISAL ACTIVITIES

1:10-1:25 Appraisal of insect cage.
1:25-1:35 Planned activities for the afternoon — (individual children needed to finish different things).

UNIT DEVELOPMENT — GROUP INTERESTS AND NEEDS

8:40-10:15 Some children read about milk; others worked on insect cage; some copied the letters to Miss Lewis.
1:35-2:00 Finished letters, budgets, poems, milk signs, insect cage, leaf prints, stories, and scrap books.
2:50-3:15 Continuation of 1:35-2:00 activities.

INDIVIDUAL INTERESTS

Outgrowth of Unit *Isolated Interests*

10:15-10:50 Rest and play.

UTILIZATION OF SKILL SUBJECTS AS FUNCTIONS

10:50-11:45 From writing letters we learned that some did not know how to make "S." Discussed best writing position, position of paper, etc., and practiced making "S."

SPECIAL CLASSES

ISOLATED TEACHING OF SKILLS

TIME	Class	Activity	TIME	Class	Activity
2:00-2:25	Gym	Socialized Games	8:40-10:15	Reading	Individual help
2:25-2:50	Music	Group Singing			

DAILY LOG

Grade: IV

Teacher: X

Date: Sept. 20

Unit: Food Study

TIME

PLANNING AND APPRAISAL ACTIVITIES

- 8:30 Planned exhibit of soybean products.
 Planned illustrations for newspaper — publishing.
 Health inspection — decided to have children write stories why
 they should brush their teeth.

UNIT DEVELOPMENT — GROUP INTERESTS AND NEEDS

INDIVIDUAL INTERESTS

*Outgrowth of Unit**Isolated Interests*

- | | |
|---|--|
| 1:00 Letter writing — finishing
articles for newspaper. | Decorating shelves.
Kenneth was asked by one of
kindergarten to help paint fur-
niture. |
|---|--|

UTILIZATION OF SKILL SUBJECTS AS FUNCTIONS

- 10:00 Learned to spell words needed in writing.
 Learned to make capital letters — studied parts of a letter.

SPECIAL CLASSES

ISOLATED TEACHING OF SKILLS

TIME	Class	Activity	TIME	Class	Activity
9:05	Music	Singing	9:25	Reading and	
11:05	Gym	Games		Language Arts	
2:45	English	Dramatization		Arithmetic	Subtraction
				Spelling	Study papers

DAILY LOG

Grade: V
Teacher: X

Date: Sept. 19
Unit: Mexico

TIME PLANNING AND APPRAISAL ACTIVITIES

10:00 Discussion of day's activities — sold supplies.

UNIT DEVELOPMENT — GROUP INTERESTS AND NEEDS

11:10 Research and discussion on contrasts found in Mexico — surface and climate. Many questions raised — zones, trade winds, climate, latitude, etc.

INDIVIDUAL INTERESTS

Outgrowth of Unit

Isolated Interests

2:45 Clay models of Mexican village.

Dramatics —
instrumental practice.

UTILIZATION OF SKILL SUBJECTS AS FUNCTIONS

8:40 Reading — group and individual leisure reading.

SPECIAL CLASSES

ISOLATED TEACHING OF SKILLS

TIME	Class	Activity
10:30	Music	Singing
11:10	Gym	Boys — Outdoor Girls — Gym

TIME	Class	Activity
8:40	Reading	Phonics

DAILY LOG

Grade: VI

Teacher: X

Date: Sept. 14

Unit: Transportation

TIME

PLANNING AND APPRAISAL ACTIVITIES

9:40 Planned to look up and read more material on locks, canals, and shipping.

UNIT DEVELOPMENT — GROUP INTERESTS AND NEEDS

8:40 Further discussion and reading about canals and locks as a result of reading the "Romance of the Soo."

1:10 Continuation of study planned during morning.

INDIVIDUAL INTERESTS

*Outgrowth of Unit**Isolated Interests*

2:45

Music, modeling, reading, mounting pictures, cleaning cupboards, drawing, etc.

9:30

Elected Class Representatives.

UTILIZATION OF SKILL SUBJECTS AS FUNCTIONS

2:45 Mensuration — measuring murals made last semester, for framing data.

SPECIAL CLASSES

ISOLATED TEACHING OF SKILLS

TIME	Class	Activity
9:55	Music	Singing
11:00	Gym	Games

TIME	Class	Activity
10:20	Arithmetic	Fractions

III. THE EDUCATIONAL PROFILE

As we have said in the previous chapter, the Educational Profile represents merely a status study. It is valuable in forming some limited generalizations about a child before

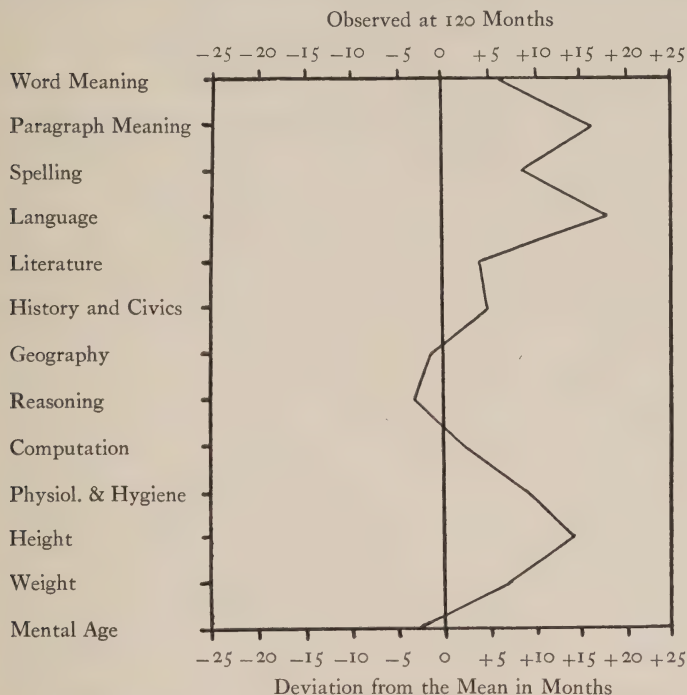


FIGURE 25. Educational Profile, Case 143F

repeated testing data are available for more revealing interpretations. By utilizing test norms which translate data into "ages" it is possible to make profiles which include achievement, intelligence, and height and weight data. The profiles picture scores in terms of months accelerated or retarded.

The two following samples will make the construction and use of profiles clearer.

The girl charted in the first sample (Figure 25) seems to have quite a wide range of deviation from the norm, but fortunately most of it is on the positive or accelerated side. At the time the tests were given she was ten years of age.

She seems to be slightly below the norm in geography, reasoning (arithmetic), and, interestingly enough, mental age. In reading, paragraph meaning (comprehension) is considerably above word meaning (recognition); this implies good utilization of reading skills along with application and

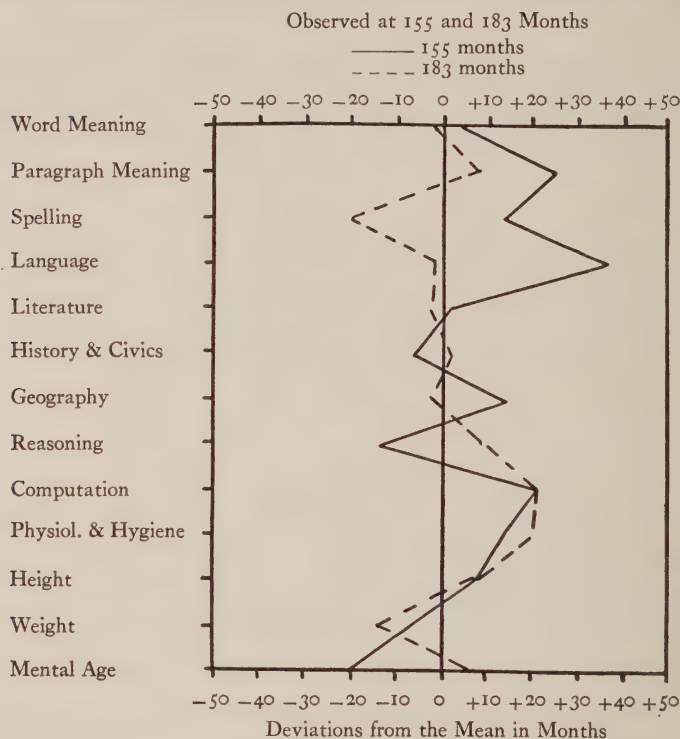


FIGURE 26. Educational Profile, Case 88F

use. In the case of language and literature, a comparison indicates a somewhat opposite conclusion. Language is considerably above literature. From this one may conclude that utilization of language-arts skills is not adequately carried out. Arithmetic scores, by which it is again possible to compare essential skills with application and utilization, point out a better performance in knowledge of skills (in computation) than in application of those skills (in reasoning). In justice to the child it should be pointed out, however, that

reasoning and mental age are both at nearly the same level in relation to the norm.

The profile shown in the second sample (Figure 26) is interesting because it shows comparisons at both 155 and 183 months. At 155 months this girl shows considerable variation from the norm, both positive and negative. It is interesting to note that her word-meaning score was approximately average for her age, whereas her score in paragraph meaning was considerably above. Comparing skill and application of skill in the language arts, her literature score was approximately normal, whereas her language score was considerably advanced. In arithmetic, this sort of comparison finds reasoning to be low, below average, with a computation score positively accelerated. This indicates, of course, that combinations and calculations can be handled but that arithmetical processes and choice of methods of attack on a problem are basically weak. History and civics scores were below average but her geography score was somewhat above. This whole profile seems to indicate ease in factual learning but difficulty in applications. Of considerable interest is the fact that her mental age is the lowest of all the ages recorded except spelling. At 183 months she tends to level out in all the aspects tested. Spelling has dropped into the negative column, and so have both language and literature. Previous high points are retained in arithmetical computation, physiology, and hygiene; and arithmetical reasoning has improved.

IV. THE GROWTH ANALYSIS

Repeated testings provide opportunities for charting all possible aspects of development of the child — achievement, mental growth, and physiological growth. Since this type of technique has been described in the previous chapter, it will be necessary here only to provide several illustrative samples of its use in appraisal and evaluation. It should be pointed out, however, that all data before being graphed have been reduced to comparable terms, in this instance (Figure 27) age, i.e., height age, weight age, mental age, and achievement age.

Examination of the graph reveals considerable irregularity of the various curves of development. Taken all together,

they show a rather consistent pattern. The over-all development shown by this child represents a more normal pattern than that of many other children.

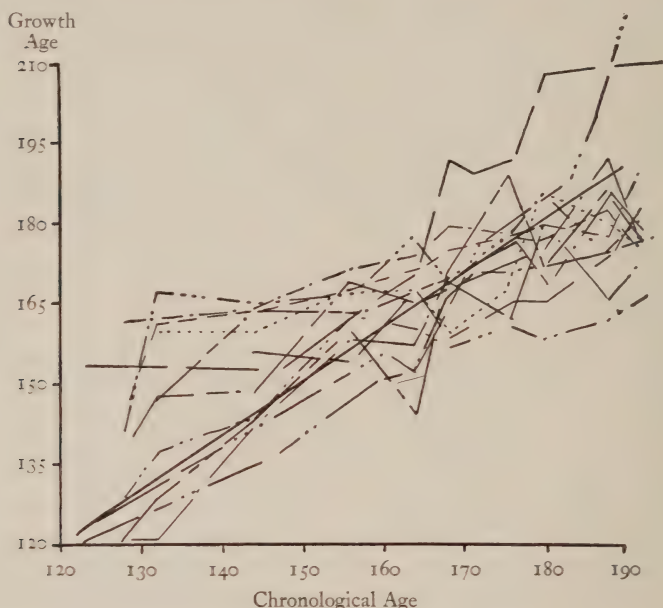


FIGURE 27. GROWTH ANALYSIS, 157F

Chronological and growth ages are shown in months. The heavy straight line represents a constant ratio between chronological age and growth age of 1.00.

CODE:

Word Meaning — —	Reasoning — — —
Paragraph Meaning — . — .	Computation — — — —
Spelling — . .	Physiology and Hygiene — — — .
Language — . . .	Weight — — . .
History and	Height — —
Civilization — — —	Mental Age — — — . . .
Geography — — .	Literature

The general pattern of growth represented here indicates a rapid rise at approximately 130 months. Unfortunately, earlier scores were not available. It is rather obvious, however, that between 120 and 130 months learning was very rapid. This would indicate that this child was probably a slow

learner in the early elementary grades. The assumption may also be advanced that during her early grades there was sufficient understanding on the part of teachers to encourage her so that the later growth was not inhibited.

From 130 months on, plateaus and depressions begin to occur. These indicate a rather late pubescence, which is verified by personal knowledge. Before this time she is well above the norm line in the majority of her growth curves.

Between 160 and 170 months there is sufficient evidence to indicate new cycles of growth and the fact that adolescence is well established. About 190 months there are again indications of a new plateau and a levelling off of the curves. The academic development of this child is disappointing only at the upper ages. Rises following adolescence are not what might be expected since it is at these age levels that the greatest discrepancy exists between the highest and the lowest curves. Her total growth pattern is quite normal. Her plateaus, however, appear later than for most girls. From 120 months to about 160 there is a narrowing of the total pattern, which usually indicates satisfactory handling of a child's academic development; but from this point on, the opposite is true — a continued expansion of high and low points the longer she is in school. Other things being equal, this is what may be expected in the typical junior high school where there is but little integration of subject-matter presentations.

In regard to achievement in relation to the norm, the girl charted in Figure 28 is an exceptional pupil. Her mental age, with an I.Q. averaging 125.6, runs approximately through the middle of the total pattern. Most of her academic curves lie considerably above the norm line.

Learning, from about 100 months to approximately 125, is rapid, with levelling off occurring about 140 months. At this age there is an indication of a second cycle of growth particularly indicated by the top and bottom curves, mental age and height respectively.

The clustering of curves around the mental age curves is probably indicative of a very desirable situation. At approximately 160 months she shows a rounding-off, probably indicating a rapidly developing adolescence.

Unlike the growth analysis of the preceding case, the many curves tend to converge. Well-integrated performance and

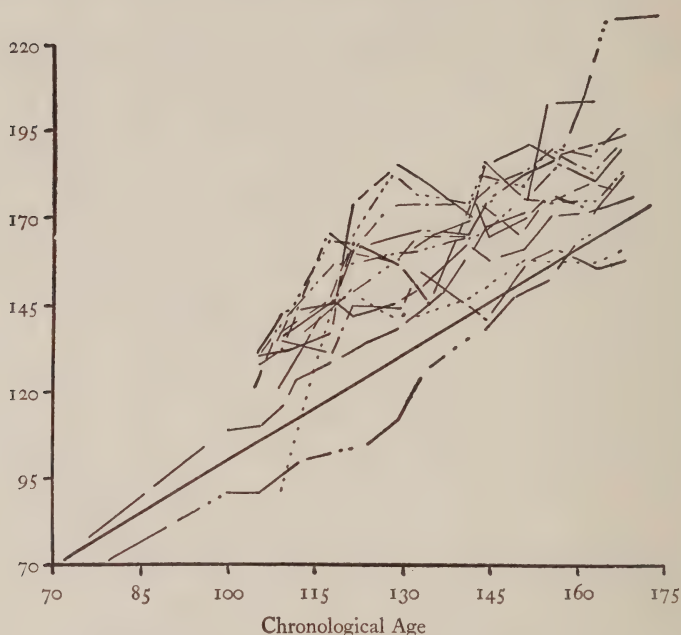


FIGURE 28. GROWTH ANALYSIS, 55F

Chronological and growth age are shown in months. The heavy straight line represents a constant ratio between chronological age of 1.00.

CODE:

Word Meaning — —	Reasoning — — .
Paragraph Meaning — . — .	Computation — — —
Spelling — . .	Physiology and Hygiene — — — .
Language — . . .	Weight — — . .
History and	Height — —
Civilization	Mental Age — — . . .
Geography — — .	Literature — —

achievement is the conclusion that may be made from this picture. Such results seem to the observer to be unusual as well as desirable, and indicative of satisfactory learning conditions.

V. THE PERSONALITY INVENTORY

Space does not permit us to include here, for illustrative purposes, a completed Personality Inventory for a given child. We shall, instead, list sub-headings, descriptive items, and the like, in order to give teachers an opportunity to select descriptive headings in making out usable forms of their own.¹ In the form used by the writers for actual case study, each of the sub-headings described below was allotted one page; there was adequate space for "Remarks" and for other data. In the outlines here, some directions for recording have been provided under "Note." These need not be followed arbitrarily; they are given only to provide ideas for recording. If a complete Inventory is developed similar to the one recommended, the following directions for its use may be found helpful:

1. The Inventory should be made out biennially if possible and should include data collected from tests, observations, ratings, reports, etc., bringing them all into a pattern picturing the child as a whole.

2. Our Inventory has been developed under comprehensive and over-lapping categories including all ranges of descriptive sketches so that much of the effort of writing is a matter of underlining and checking.

3. When possible, the Inventory should be synchronized with available Journal Records. Where blanks are insufficient for telling the whole story, the Journal Record can be used as a supplementary instrument. In other words, it is possible to use Journal Records so that individual pages of the Inventory can be provided with footnote references to the content of Journals related to the categories in question.

I. SCHOOL HISTORY

A. GENERAL INFORMATION

1. Present age as of
2. Age for present grade: Normal Average Underage

¹ The writers are indebted to many scales and personality analyses for the descriptive terms used in the Inventory. Particular acknowledgment, however, should be made to the cooperative Detroit study of child growth and development under the direction of Dr. Stuart A. Courtis.

3. Progress in school: Rapid Normal Slow
4. Absence: Frequent Infrequent Never
5. Tardiness: Frequent Infrequent Never
6. Truancy: Frequent Infrequent Never
7. Scholarship: Excellent Good Average Poor
8. Is pupil a serious disciplinary problem?
9. Subjects in which best work is done:
10. Subjects failed:
11. Curriculum pursued: Difficult Easy Suitable
12. Extra-curricular interests:
13. Dates of interrupted attendance:
14. Reasons for interruptions:
15. Remarks: Dates reported:

NOTE: Mostly a check sheet; some blanks to be written in.

B. SPECIAL TALENTS

1. Sports: Special field games liked
2. Literary: A great reader, able writer, prose, poetry.
3. Dramatic: Special interests
4. Mechanical: Things made Handicrafts
5. Scientific: Interests
6. Naturalist: Interests
7. Collector: Interests
8. Musical: Appreciative Performer Field
9. Artistic: Fields
10. Leader: Fields
11. Organizer: Fields
12. Civic minded: Fields
13. Religious: Activities or interests
14. Attitude toward: Movies Radio Parties Opposite Sex Pets

Likes	.....	.....	.....	.....	.....
Average	.....	.....	.....	.....	.....
Dislikes	.....	.....	.....	.....	.....
15. Clubs: Belongs to
16. Works outside of school doing:
17. Habits: Swears, smokes, drinks, fights, sex activities.
18. Remarks: Dates reported:

NOTE: Check (✓) items 8, 14; write in items 1, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 15, 16, 18; underline items 2, 17.

C. SEMESTER RECORD

1. Times tardy absences
2. Duplicate report card record

3. Subject most disliked, if any
4. Subject most liked, if any
5. Attitude toward: Teacher principal
janitor supervisors visitors
6. This child this semester: has improved greatly, has developed about
as usual, has deteriorated greatly
Reason:
7. Approximate rank among classmates in fifths: behavior
achievement growth effort
8. Remarks: Dates reported:

NOTE: Check (✓) item 7; write in items 1, 3, 4, 5, 8; underline item 6. Item 2 should represent a duplicate of the current report card.

2. PHYSICAL EFFICIENCY AND HEALTH STATUS

A. BIRTH AND EARLY DEVELOPMENT

1. Circumstances regarding birth
2. Habit formation: eating toilet walking
talking
3. Early health: illnesses physical defects thumb-
sucking enuresis nail biting
stuttering or stammering fainting spells
convulsions sleep disturbances
4. Remarks: Dates reported:

NOTE: All items here are to be filled in rather comprehensively from interview records.

B. GENERAL HEALTH

	1	2	3	4	5		
1. Height: Abnormal	Normal	S O
2. Weight: Abnormal	Normal	S O
3. Vision: Abnormal	Normal	S O
4. Hearing: Abnormal	Normal	S O
5. Speech: Abnormal	Normal	S O
6. Teeth: Abnormal	Normal	S O
7. Adenoids: Abnormal	Normal	S O
8. Tonsils: Abnormal	Normal	S O
9. Heart: Abnormal	Normal	S O
10. Lungs: Abnormal	Normal	S O
11. Breathing: Shallow	Deep	S O
12. Digestion: Poor	Good	S O
13. Elimination: Irregular	Regular	S O
14. Diet: Unbalanced	Balanced	S O
15. Meals: Irregular	Regular	S O

16. Skin: Irregular	... ..	Healthy	S O
17. Posture: Poor	... ..	Good	S O
18. Rest: Insufficient	... ..	Sufficient	S O
19. Sleep: Insomnia	... ..	Undisturbed	S O
20. Exercise: Insufficient	... ..	Adequate	S O
21. Bath: Infrequent	... ..	Often	S O
22. Appetite: Poor	... ..	Good	S O
23. Constitution: Weak	... ..	Strong	S O
24. Coordination: Poor	... ..	Good	S O
25. Physical deformation	.....	
26. Glandular troubles	.....	
27. Diseases	.....	
Dates	.....	
28. Surgery	.....	
29. Remarks:	.....	Dates reported:	.....

NOTE: Items 1 to 24 can be used as a profile by assuming column 3 as average and by connecting points down the page. Circle either S or O for each of first 24 items; S means a subjective, non-professional, or un-documented rating; O means an objective rating substantiated by a professional viewpoint, physician's record, etc.

C. PHYSICAL CHARACTERISTICS

In comparison with the average of the other children in his class, this child is:

1. *Race*: White, Negro, Indian, Oriental.
2. *Nationality*: American, Canadian, English, other.
3. *Height*: Much taller, taller, average, shorter, much shorter.
4. *Build*: Stocky, fat, plump, average, thin, skinny.
5. *Health*: Robust, healthy, average, weak, sickly.
6. *Energy*: Dynamic, energetic, average, lethargic, ill.
7. *Movement*: Very fast, fast, average, slow, very slow.
8. *Hands and feet*: Accurate, precise, controlled, average, fumbles, breaks, spoils.
9. *Action*: Acts easily without effort, acts readily with little effort, average, action with visible effort, action accompanied by jerks and grimaces.
10. *Maturity*: Very mature, quite mature, immature, very immature.
11. Remarks: Dates reported:

NOTE: All items here represent mainly subjective judgments; underline the description which seems most accurate.

D. DEFECTS AND GENERAL APPEARANCE

In comparison with the average of the other children in his class, this child is:

1. *Sight*: Very good, good, average, poor, very poor.
2. *Hearing*: Very good, good, average, poor, hard of hearing, deaf.
3. *Hands*: Normal, defects.
4. *Feet*: Normal, defects.
5. *Speech*: Very good, good, average, stutterer, baby talker, lisper.
6. *Cleanliness*: Neat and clean, clean, average, dirty, untidy, very dirty, body odor.
7. *Clothes*: Very well dressed, well dressed, average, cheaply dressed but neat, poorly dressed and dirty.
8. *Hair*: Well combed and cut, average, disorderly, unkempt and needs cutting.
9. *Skin*: Delicate, smooth, healthy, soft, average, rough, hairy, freckled, pimply, diseased.
10. *Eyes*: Clear, deep, expressive, average, dull, shifting, crossed.
11. Remarks: Dates reported:

NOTE: The whole rating can be done by underlining the appropriate items; some classifications may call for two or more underlinings.

3. HOME ENVIRONMENT

A. GENERAL RATING

	1	2	3	4	5		
1. Neighborhood: Undesirable	Desirable	S O
2. Playmates: Undesirable	Desirable	S O
3. Language: Non-English	Good English	S O
4. Father: Lazy	Industrious	S O
5. Mother: Lazy	Industrious	S O
6. Training of Child: Disagree	Agree	S O
7. Care of Child: Neglected	Appropriate	S O
8. Duties of Child: None, too many	Appropriate	S O
9. Parental relationships: Disturbing	Harmonious	S O
10. Adequacy of Home: Poor	Good	S O
11. Remarks: Dates reported:							

NOTE: Using 3 as average, connect points down the page; when a previous rating is available, include this as well as the present rating. Circle S or O in each item according to whether the observation is subjective or objective. Subjective would refer to a "second-hand" observation whereas objective would refer to a careful, studied observation of the situation.

B. PARENTAL HISTORY

- | | | |
|--------------------------------------|-----------------------|--------------|
| 1. Nationality of: | Father | Mother |
| 2. Religion of: | Father | Mother |
| 3. Occupation of: | Father | Mother |
| 4. Health of: | Father | Mother |
| 5. Age of: | Father | Mother |
| 6. Age at marriage of: | Father | Mother |
| 7. Age at birth of
child of: | Father | Mother |
| 8. Education of: | Father | Mother |
| 9. Previous
marriages of: | Father | Mother |
| 10. How dissolved: | Father | Mother |
| 11. Intelligence of: | Father | Mother |
| 12. Relationship of parents | | |
| 13. Economic status | | |
| 14. Social status | | |
| 15. Club membership of parents | | |
| 16. Remarks: | Dates reported: | |

NOTE: All blanks call for "fill in" data.

C. HOME INFLUENCES

1. This child lives with: father and mother; father, mother divorced; mother dead; mother, father divorced; father dead; other conditions
2. Type of home: wealthy, well to do, average, meager, poor, sordid.
3. Type of home: united, cooperative, average, quarrelsome, divided.
4. Attitude of parents toward child: ambitious, proud, indulgent, sympathetic, helpful, critical, faultfinding, driving.
5. Attitude of parents toward school and child's education: too ambitious for child, interested and cooperative, indifferent, antagonistic.
6. Discipline of child: severe, unreasonable, cruel, intelligent, lax.
7. Type of child: spoiled, babied, cowed, broken, starved for affection, normal, good, exceptional.
8. Person specially influencing child and nature of influence
9. Language spoken in home
10. Number of other children
11. Relation of this child to other children
12. Relatives who influence child or control of child
13. Friends who influence child or control of child
14. Remarks:

NOTE: Items 1 to 7 call for underlining of proper characteristics; items 8-14 call for fill-in type of recording.

4. WORK TRAITS

A. STUDY HABITS

	1	2	3	4	5		
1. Slow about starting	Starts work promptly	S O
2. Ignores directions	Follows directions	S O
3. Careless work	Careful work	S O
4. Never finishes	Does extra work	S O
5. Finishes late	Finishes early	S O
6. Dependent	Works independently	S O
7. Becomes discouraged	Persistent	S O
8. Attention wanders	Sustained application	S O
9. Works spasmodically	Works consistently	S O
10. Poor retention	Good retention	S O
11. Studies under pressure	Studies regularly	S O
12. No originality	Original	S O
13. Sees problem piecemeal	Sees complete problem	S O
14. Never plans or outlines	Shows planning	S O
15. Accepts first results	Suspends judgment	S O
16. Forced interest	Spontaneous interest	S O
17. No curiosity	Intellectually curious	S O
18. Uses tools poorly	Uses tools well	S O
19. Remarks:	Dates reported:						

NOTE: Use 3 as average and draw line between checked columns showing the picture in profile.

B. WORK HABITS

Poor Average Good

1. Lazy, indolent, uninterested	...	...	...	Industrious
2. Hates work and avoids it	...	...	...	Enjoys working
3. Inefficient worker	...	...	...	Efficient worker
4. Puts things off	...	...	...	Does things promptly
5. No pleasure in work	...	...	...	Takes pride in work
6. Untidy	...	...	...	Neat
7. Unsystematic	...	...	...	Orderly
8. Uninterested in improvement	...	...	...	Tries to improve

- | | | | | |
|--------------------------------|-----------------------|-----|-----|-------------------------|
| 9. Satisfied with poor work | ... | ... | ... | Tries to improve |
| 10. Happy to get by | ... | ... | ... | Does more than required |
| 11. No sense of responsibility | ... | ... | ... | Accepts responsibility |
| 12. Resents criticism | ... | ... | ... | Welcomes criticism |
| 13. Has low standards | ... | ... | ... | Has high standards |
| 14. Leaves materials around | ... | ... | ... | Cleans up after work |
| 15. Is messy when working | ... | ... | ... | Works neatly |
| 16. Shirks | ... | ... | ... | Never shirks or alibis |
| 17. Won't admit errors | ... | ... | ... | Admits mistakes |
| 18. Never finishes | ... | ... | ... | Carries plans through |
| 19. Remarks: | Dates reported: | | | |

NOTE: Check in one of three columns and connect points down the page.

C. MENTAL CHARACTERISTICS

1. Attention: Alert, on the job; attentive; average; dreamy, non-attentive; distracted; confused; scatter-brained.
2. Understanding of instructions: Grasps new ideas readily; understands after questions; average; confused but knows he doesn't understand; thinks he understands but really doesn't; confused and helpless.
3. Concentration: Holds to task and achieves; holds to task with occasional lapses; average; means to concentrate but doesn't; has to be driven; attends more to others than to his own work; can't concentrate even under supervision.
4. Memory: Remembers well; fairly well; average; means to remember but doesn't; forgets easily; never remembers.
5. Imitates: Imitates easily and well; imitates fairly well; average; imitates little and with difficulty; can do things only his own way.
6. Openmindedness: Curious and interested in all new experiences; receptive to new ideas; progressive; average; prefers the familiar; conforms; resents new ideas; conservative.
7. Initiative: Active in initiating; self-starter; has considerable initiative; average; has little or no initiative; never initiates.
8. Originality: Has many good ideas; creative; quite creative; average; seldom creative; never creates; always copies.
9. Foresight: Always foresees consequences; anticipates; average; seldom looks ahead; never looks ahead; surprised by consequences.
10. Remarks: Dates reported:

NOTE: Underline one or more under each category.

D. MENTAL FUNCTIONING

1. Sensitivity: Very sensitive and quick to respond; fairly sensitive; average; seldom is aware of new stimuli; responds to new stimuli with difficulty.
2. Purposing: Has strong purposes of his own; has many purposes; average; has few purposes but holds to them; has many purposes but doesn't stay with them; copies purposes from others; listless, indifferent.
3. Planning: Plans all actions carefully and well; plans fairly well; average; makes imperfect, inadequate plans; copies plans of others; is unable to plan.
4. Executing: Carries out plans efficiently, modifying when necessary; acts efficiently without planning; follows plans fairly well; average; follows plans imperfectly; unable to follow a plan.
5. Judging: Has high standards and judges achievement accurately; has good standards and judges fairly well; average; has very low standards and poor judgment; has no standard and is unable to judge.
6. Generalizing: Profits by experiences; seldom makes same mistake twice; profits somewhat from experience; average; profits little from his own or others' experiences; repeats mistakes; repeats blunders over and over.
7. Analytical ability: Is a good thinker, analyzes; a fair thinker; average; analyzes little and imperfectly; a poor thinker; is unable to analyze or reason.
8. Vicarious learning: Is able to enter into and profit by experience of others; has some ability to do this; average; has little ability to profit by experience of others; has no ability to do this.
9. Remarks: Dates reported:

NOTE: Underline appropriate characteristics under each item.

5. PERSONAL HABITS AND TRAITS

A. GENERAL RATING

	1	2	3	4	5		
1. Attitude: Inferior	Confident	S O
2. Cleanliness: Unclean	Immaculate	S O
3. Cooperation: Lacking	Habitual	S O
4. Courtesy: Infrequent	Habitual	S O
5. Dependability: Infrequent	Habitual	S O
6. Disposition: Irritable	Calm	S O
7. Disposition: Unhappy	Happy	S O
8. Disposition: Cruel	Kind	S O
9. Disposition: Pessimistic	Optimistic	S O
10. Dominance: Submissive	Aggressive	S O

11. Effort: Poor	... ..	Industrious	S O
12. Integrity: Lacking	... ..	Uniform	S O
13. Judgment: Irrational	... ..	Rational	S O
14. Leadership: Lacking	... ..	Marked	S O
15. Reliability: Irresponsible	... ..	Responsible	S O
16. Self-control: Unstable	... ..	Stable	S O
17. Thrift: Wasteful	... ..	Saving	S O
18. Remarks:	Dates reported:		

NOTE: As in previous forms, make check list into a profile with S or O circled to indicate reliability of rating.

B. CHARACTER AND IDEALS

In comparison with the average of other children, this child is:

1. Well integrated: Strong purposes both in and out of school. Life has a dominant unity for him.
2. Somewhat integrated: Many purposes but not too well coordinated.
3. Average.
4. Poorly integrated: Conflicting purposes; little thinking or planning.
5. Not integrated: No plan. Child merely responds to whatever stimulus is present.
6. Disintegrated: Child torn between conflicting pulls which he is unable to integrate or control.

The child by his behavior and remarks gives evidence of having or not having ideals or aims which he uses as control of behavior:

7. About self
8. About self and authority
9. About responsibilities
10. About work
11. About others
12. About care of things
13. Remarks: Dates reported:

NOTE: From the first 6 items check one; in items 7 to 13 write comments.

6. PERSONAL ADJUSTMENT

A. ADJUSTMENT INVENTORY

1. Social attitude: Friendly, makes friends easily; has few friends; unfriendly; shunned by others.
2. Emotional control: Well poised; easily irritated; frequent emotional outbursts; fearful, depressed.
3. Nervousness: Calm and self-controlled; uneasy, bites fingernails; stammers, nervous tics, hyperactive; nervous disease.

4. Daydreaming: Responsive and alert; generally alert; seldom alert; withdrawal, phantasy.
5. Responsibility: Responsible; frequently responsible; assumes responsibility unwillingly; irresponsible.
6. Interest: Spontaneous interest; intermittent interest; interested only in play or game; slight or no interests.
7. Laziness: Industrious; occasionally requires motivating; consistently needs motivating; difficult to motivate, listless.
8. Happiness: Happy; frequently unhappy; moody; morose.
9. Conduct: Well behaved; frequently annoys other children; impudent, quarrelsome, domineering; cruel, bullies other pupils.
10. Remarks: Dates reported:

NOTE: Underline one characteristic under each item.

B. EMOTIONAL CHARACTERISTICS

In comparison with the average of other children in his class, this child:

1. Is happy, romantic, optimistic, courageous, pleasant, confident, self-reliant, cheerful, has good sense of humor, is frank, kind, thoughtful, ambitious, sympathetic, generous, forgiving, dreamy, refined, nice, obedient, mischievous, good.
2. Is troubled, distressed, pessimistic, cynical, antagonistic, blustering, boisterous, sullen, moody, depressed, cheerless, mean, rough, obscene, profane, resentful, jealous, envious, self-willed, coarse, disobedient, evil minded, bad.
3. Is fearful, nervous, irritable, easily angered, afraid, timid, shy, self-conscious, sensitive, fickle, weak, holds grudges, is noisy.
4. Is self-controlled, even tempered, hot tempered, sentimental, silly, giggly, always clowning, placid, phlegmatic, stubborn, dull, stupid, uninteresting, repulsive.
5. Laughs easily, smiles frequently, is stolid and unemotional, frowns and scowls, cries easily, has temper tantrums, grouches, complains, objects, rattles, criticizes.
6. Is bossy, dominating, aggressive, persistent, possessive, a leader, independent, has self-assurance, is sincere, docile, easily influenced, secretive, a follower, submissive, subservient.
7. Has superiority complex, strong ego, is conceited, seeks spotlight, demands attention, is sensitive to what others think of him, indifferent to what others think of him, unaware of what others think, self-centered, self-willed, reserved and aloof, humble, has inferiority complex.
8. Remarks: Dates reported:

NOTE: Check as many characteristics under each item as are descriptive of the child.

C. SOCIAL CHARACTERISTICS

In comparison with the average of other children in this class, this child:

1. Makes advances to others, makes friends easily, is socially minded, a good mixer, well liked, respected, shares with others, has good times with others, is cooperative, extraverted.
2. Responds to advances by others, makes friends with difficulty, is individualistic, has few friends, is disliked by others, avoided by others, ridiculed by others, persecuted by others, introverted.
3. Is friendly with all, friends with many, friendly with select few, has a few chums, is exclusive with a few friends, haughty and cold, lonely and would like friends.
4. Has wide interests and many sets of friends, has narrow interests and few friends, goes with a bad gang out of school.
5. Remarks: Dates reported:

NOTE: Select as many characteristics under each item as are descriptive of the child.

VI. THE HEALTH RECORD

Because the health of the child is so important, it seems advisable to outline specific responsibilities for those concerned with it. The following outline is taken from Bulletin 325 of the Department of Public Instruction of the State of Michigan, *Teacher Observation of Health Conditions of School Children*.¹

A. Pertinent Family Situations.

It is desirable for the teacher to secure pertinent information about the health conditions of the family which may affect the child, such as tuberculosis, diabetes, heart and mental disorders.

Family relations also should be considered, such as members of family group, child's position in group, satisfying relations in the group, employment of parents or guardians, economic level of living, and use of leisure time.

B. Physical Health Conditions.

1. Evidence of good physical health.

Growth — suitable to body, showing a reasonable annual increase.

Energy — sufficient for routine, adaptable to individual.

¹ EVANS, ALICE, and others, *Teacher Observation of Health Conditions of School Children* (Bulletin No. 325). Lansing, Mich.: Department of Public Instruction, State of Michigan, 1945, pp. 9-16.

Skin — clear, free from infection.

Mucous membranes — clear and definitely pink.

Hair — clean and lustrous.

Eyes — bright, clear, moving normally.

Nose — unobstructed in breathing.

Teeth — well formed, free from caries, clean.

Breath — absence of disagreeable odor.

Posture — symmetrical position of body on “standing tall,” good muscular coordination.

Muscles — firm, good tone.

Subcutaneous tissue — fat layer beneath skin, firm, good tone.

Speech — normal development, free from defects.

Nervous condition — free from involuntary twitchings and other nervous symptoms.

2. Variations from good conditions.

a. Growth.

Teacher's interpretation of growth should take into consideration that:

Growth rate is an individual problem.

Growth is irregular and may show fluctuations from month to month.

Growth during pre-adolescent and adolescent period increases in acceleration and is irregular in character.

Girls usually begin and complete their adolescent growth from one to three years earlier than boys.

Some children reach maturity earlier than others.

Body build and the growth pattern are closely related to family tendencies.

Observations to make

Failure to gain for a period of four to six months.

Loss of weight not satisfactorily explained.

Too rapid gain not satisfactorily explained.

Encourage children to keep individual monthly growth records.

Report to parents, nurse, or other consultants all children whose growth seems questionable.

Enter on cumulative health record the first height and weight each year.

b. Nutrition.

A study of a child's nutrition should include an evaluation of what the child is actually eating with special attention to "protective foods," eating habits, growth rate, play and rest habits, frequency of illness, and evidences of emotional tension in the child.

Observations to make

Poor gaining rate.

Chronic fatigue, listlessness, inattentiveness, irritability, overactiveness.

Lack of energy.

Poor muscular tone and poor posture.

Make notes on observations that seem questionable for the cumulative record and discuss them with parent, nurse, or other consultant.

c. Communicable disease control.

Observation throughout the school day should be made informally for early common symptoms of communicable disease. Informal, however, means definite and planned. Cooperation of the home and responsibility of the child in observing symptoms should be urged. In case of communicable disease in the community a more formal type of observation should be made according to the suggestions of the health department.

Observations to make

Coughing or sneezing.

Sore or inflamed throat.

Running nose.

Red or watery eyes.

Any skin eruption or rash.

Nausea or vomiting.

Faintness or dizziness.

Chills or convulsions.

Unusual pallor of face.

Unusually flushed face.

Children showing one or more of these symptoms should be isolated, and provision should be made for taking the child home. The parent should be noti-

fied and urged to see the family physician. Known or suspected contagion should be reported promptly to the health department. An absence for illness record with dates should be kept accurately during each year on the cumulative health record.

d. Immunization and disease history.

With the aid of parents, complete and accurate records on immunization for smallpox, diphtheria, whooping cough, tuberculin tests, and disease history with dates should be entered on the cumulative record.

e. Vision.

Observation of vision should include more than testing with the Symbol "E" Chart, Snellen Scale. This test is helpful only to find nearsightedness (myopia). There are symptoms which may indicate farsightedness, astigmatism, and other conditions, perhaps of a more serious nature, which the teacher should observe. All symptoms of eye strain and other evidences of unusual conditions should be carefully noted. Efforts should be made to find out home reading habits and use of light.

Observations to make

Symptoms of eye strain and other eye disorders.

Crossed eyes.

Sunken, protruding, or bloodshot eyes.

Crusted, swollen, or red lids.

Styes.

Watery eyes.

A history of headaches, nausea, dizziness, blurred vision, sensitivity to light.

Behavior indicating possible visual difficulties:

Attempts to brush away blur.

Excessive blinking.

Frowning or scowling.

Abnormal position of the head when reading or looking at a distance.

Rubbing eyes frequently.

Complaints of not being able to see the blackboard or charts from a reasonable distance.

Test vision with the Symbol "E" Chart for nearsightedness. (This test does not show evidence of

eye strain at reading distance, fifteen to eighteen inches.)

Symptoms of eye strain should be reported to parent, nurse, or other consultant as they are observed during the year.

The test score if 20/40 or over should be sent to the parent and nurse early in the fall. A score of 20/30 or over should be retested in six months if it has not been taken care of. The observation and score should be entered on the record with date.

f. Hearing.

Some children who are considered dull and inattentive may only be suffering from defective hearing. The teacher should be aware of this possibility. Sometimes deafness is only temporary, the result of a cold, infection in the ear due to illness, or accumulated wax in the ear. These facts need consideration.

Observations to make

Repeated earache, discharging ears, chronic tonsillitis, and other throat infections.

Frequent picking at the ear or other evidence of irritation.

Slowness, inattention, anxious or listless expression, mistakes in the schoolroom.

Turning the head to hear better.

Talking in a monotone.

Enter observation on the cumulative record and report to parent, nurse, or other consultant.

g. Mouth hygiene and dental condition.

Effort should be made to have all children under regular periodic dental care, the frequency determined by the child's dentist. The teacher's observation of children's teeth should only supplement and not take the place of this regular dental supervision. The teacher, parents, and children can detect only large cavities and marked disturbance of gum tissue. The purpose is mainly to arouse the interest of children in their own mouth health.

Observations to make

Cleanliness of teeth.

Presence of gross caries (decay) or toothache.

- Irregular teeth.
- Stained teeth.
- Swellings about the jaws or neck.
- "Gum boils" or inflamed gums.
- Offensive breath.
- Mouth habits which cause irregular teeth, such as lip-biting, finger-biting, pencil-biting, thumb-sucking.
- Use of "sweets" such as candy, chewing gum, pop, ice-cream sundaes, pastry.
- Enter on the cumulative record the dates of dental care received and make note of any condition needing attention.
- Report these conditions to parent, nurse, or other consultant.

h. Nose.

- Every child, unless having a cold, should be able to breathe freely through the nose with the mouth shut. Mouth breathing usually indicates some nasal obstruction. The habit may persist after the correction.

Observations to make

- The child who habitually breathes through his mouth when sitting quietly.
- Chronic or frequent colds and cough.
- Chronic nasal discharge.
- Frequent nose bleeding.
- Nasal speech.
- Persistent snoring (home reports).
- Make note of findings on the cumulative health record and report to parent, nurse, or other consultant.

i. Tonsils.

- The important point in considering tonsils is the history connected with throat conditions. Tonsils in questionable condition almost always show a history of trouble. Grossly enlarged tonsils, seemingly healthy, are in an abnormal condition which may obstruct breathing. The teacher must be careful never to diagnose condition of tonsils or to say that "tonsils should be removed."

Observations to make

A history of frequent sore throat, colds, tonsillitis, swollen glands, mouth breathing, or snoring.

An absence for illness record with cause is an important aid to determine the history of throat conditions. Any questionable condition should be recorded and brought to the attention of parent, nurse, or other consultant.

j. Lymph glands.

Children sometimes develop enlarged glands at the sides of the neck which accompany or follow infections. The teacher should be aware of this relationship and bring the matter to the attention of parent, nurse, or other consultant.

k. Thyroid.

Enlarged thyroid, being prevalent in Michigan, should be observed. The simple goiter may not noticeably affect the health but other forms of thyroid may be of a serious nature.

Any degree of enlargement evident should be noted and referred to parent, nurse, or other consultant.

l. Heart and lungs.

Teachers cannot do specific observations of heart or lung conditions. But a teacher should notice the child who shows fatigue easily under slight exertion, loses weight, or fails to gain for a prolonged period, or shows other evidences of disturbed functioning. Evidences of these conditions should be discussed with the parent, nurse, or other consultant, and suitable records kept.

Special attention should be given the child with a history of tuberculosis in the family to the end that the child's physician may study the situation.

m. Skin.

Any eruption or persistent scratching is abnormal. Continued observation should be made throughout the day and at the earliest suspicion of possible communicable condition the child should be excluded and referred to the health department immediately.

Observations to make

Color not clear, pale.

Skin eruptions; rash, roughness, pimples, blisters, scales, sores, ulcers, and excessive redness.

The child's habit of frequently scratching the skin or scalp.

Degree of cleanliness.

Conditions should be recorded and reported.

n. Crippled condition (orthopedic defects).

No special mention is made here of posture because posture habits are so closely related to other health problems such as nutrition, fatigue, and mental health. However, when a child "standing tall" is unable to assume symmetrical alignment, that is, even shoulders and hips, a condition needing attention may be suspected.

Uneven position of shoulders or hips.

Peculiarity of posture and use of feet.

Peculiarity of gait or use of hands.

Deformities of any type.

Any history of "rheumatism" or "growing pains."

Record and refer to parent, nurse, or other consultant, if needing attention.

o. Speech defects.

Speech defects need careful analysis by professionally trained specialists before any correction can safely be undertaken by the teacher with the child. Work should only be done in cooperation with this specialist.

Observations to make

Speech defect that is persistent or present only under emotional stress.

Defective hearing accompanying the speech defect.

Record conditions observed and confer with parent, nurse, or other consultant on the problem.

p. Nervous symptoms.

Persistent evidences of nervous instability of a physical type should be observed.

Observations to make

Restlessness, over-excitability.

Habitual spasm or twitching of face and other muscles.

Fainting spells.

Record any questionable conditions and confer with parent, nurse, or other consultant about them.

VII. IN CONCLUSION

The purpose of recording data is not primarily to set up bookkeeping or accounting records. Its fundamental value lies in its adaptiveness for more intelligent handling of children; in other words, as a means for effective understanding for guidance purposes.

The techniques described in this chapter include many devices for recording data. Because of the comprehensiveness and detail of certain of the recommended techniques and because of the omission of certain others, it seems appropriate to close with a review of the purpose of records and their utilization:¹

1. Any form devised should be based on the objectives of teachers and schools so that a continuing study of a pupil by its use will throw light on his successive stages of development in powers or characteristics believed to be important.

2. The forms dealing with personal characteristics should be descriptive rather than of the nature of a scale. Therefore "marks" of any kind, or placement, as on a straight line representing a scale from highest to lowest, should not be used.

3. Every effort should be made to reach agreement about the meaning of trait names used, and to make their significance in terms of the behavior of a pupil understood by those reading the record.

4. Whenever possible, a characterization of a person should be by description of typical behavior rather than by a word or phrase that could have widely different meanings to different people.

5. The forms should be flexible enough to allow choice of headings under which studies of pupils can be made, thus allowing a school, department, or teacher to use the objectives considered important in the particular situation or for the particular pupil.

6. Characteristics studied should be such that teachers will be likely to have opportunities to observe behavior that gives

¹ SMITH, EUGENE R., and TYLER, RALPH. *Appraising and Recording Student Progress*. New York: Harper and Brothers, 1942, pp. 467-468.

evidence about them. It is not expected, however, that all teachers will have evidence about all characteristics.

7. Forms should be so devised and related that any school will be likely to be able to use them without an overwhelming addition to the work of teachers and secretaries.

8. Characteristics studied should be regarded not as independent entities but rather as facets of behavior shown by a living human being in his relations with his environment.

SELECTED REFERENCES

1. SMITH, E. R., and TYLER, R. W. *Appraising and Recording Student Progress*. New York: Harper and Brothers, 1942.
2. TIEGS, ERNEST W. *Tests and Measurements in the Improvement of Learning*. Boston: Houghton Mifflin Company, 1939.
3. WEBB, L. W., and SHOTWELL, ANNA MARKT. *Testing in the Elementary School*. New York: Farrar and Rinehart, Inc., 1939.
4. *Fifteenth Year Book of the Department of Elementary School Principals, Michigan Education Association*. "Child Growth in an Era of Conflict." Lansing, Mich.: Michigan Education Association, 1944.

Reporting to Parents

A BADLY neglected area of school improvement has been that of contacts with the homes of children. Probably no other phase of the program has caused so much uncertainty and sorrow to teachers or so much maladjustment and discouragement to children. It is an area in which pressures are sometimes intense, but more often one in which problems are expressed in dull grumblings of protest.

Less commonly recognized is the effect upon the children themselves of a satisfactory or an unsatisfactory teacher-parent relationship. Every teacher knows that she has little or no difficulty with the youngster who comes from a home which takes pains to keep alert to the child's progress at school, to support the teacher in worthwhile activity, and to do all the things that demand active cooperation between home and school. What is not realized is the threat against the child's emotional balance, his attitudes and drives, and his happiness if there is conflict and lack of understanding between home and school.

Probably no other administrative practice affects the kind of teaching carried on in a school quite so much as the kind of appraisal records that are used. How can a teacher do anything but teach formal reading or strive merely for acquisition of skills in arithmetic, spelling, and other subjects, when the only evaluation of her work and of the scope and breadth of the child's learning is the conventional type of record and report card? The teacher of music, art, and dramatics, as well as of the "3 R's," really has a much better opportunity to retain the good will of her patrons than has the teacher who instructs only in the so-called academic branches. If Johnny fails in spelling but can

nevertheless speak a piece or play a harmonica solo, he has a chance to star in a parent-teacher program. In some schools the special teacher receives all the credit for such performances, and the strictly academic teacher is in the background as far as making an impression on the parents is concerned.

It is essential, if school practice is to be consistent with school objectives, that an attack be made on the problem of reporting. It is trite to say that conventional school marks are unsatisfactory. Most teachers realize this, and many have been hoping for years that something would be done to improve the situation. What most fail to realize, though, is that parents in general do not know that school marks are not so highly regarded by the teaching body itself. For the parent, the report card is real evidence of the pupil's success or failure. For some children, the card is a source of income. It would indeed be interesting to ascertain the amount of money that passes each month from parent to child as a reward for superior work in school! On the other hand, we would be a saddened but perhaps wiser group if we only had some way of knowing the burden of unhappiness carried by children with "unsatisfactory" report cards.

Research findings have made it clear that the conventional marking system is neither reliable nor valid. Such research has been based upon experimentation in which different teachers have been asked to mark or score the same papers. Wide variation has been found in the subsequent marks, undoubtedly because teachers are unable to appraise accurately and tend to be influenced by other considerations than the performance before them. Anyone who has ever taught school is aware of the almost universal practice of giving low marks at a given time so that the child will be "motivated" to study more effectively in the future. Every teacher is almost as well acquainted with the practice of giving a low mark whenever a pupil shows a tendency to resist the teacher's authority and becomes impudent and a behavior problem.

For a number of years, during the beginnings of the testing movement with its emphasis upon objectivity in measurement, serious attempts were made to improve the marking system. New-type tests were frequently used and, to say the

least, did improve objectivity. They also helped to further a new development in marking, namely, the "character" rating. Objective tests brought out the fact that frequently those pupils who obtained high test scores were among the laziest and the worst-behaved pupils in school; the character rating made it possible to remove the influence of behavior in determining a child's mark.

There are other problems than that of isolating behavior from performance in determining a child's mark, such problems as those raised by enriched curricula, changing objectives, differentiated assignments, and programs built around individual needs. One must conclude that the newer types of educational program certainly cannot be made compatible with a quantitative rating of achievement. From the standpoint of a philosophy of marking it is impossible to hand out marks in a few compartmentalized aspects of subject matter when the whole program is dedicated to a synthesis of all subject matter in bringing about desirable changes in children. What place can a system based on competition occupy in a program characterized by democratic living? Is not a discordant element introduced and is not the teacher right who says that the elementary program of instruction cannot make its full contribution when we try to make bedfellows of a competitive system of marking and a program emphasizing activity for individual and social development?

The traditional type of report card undoubtedly has done more harm than good. It has been faulty in character because it has given an evaluation of the youngster's work without noting the basis for the evaluation and without stating any of the good qualities he is developing even when his marks are low. The parent has had no possible basis for interpreting progress and has tended to become antagonistic either toward the school or toward the child.

Furthermore, the traditional type of report card has based its marks upon one thing only, proficiency in academic subjects. A youngster could be a paragon of virtue who has a desirable personality, ability and willingness to cooperate with others, emotional stability, and good social attitudes, but no mention of these traits would appear on his card. At

its best it gave the parent a partial picture of the child's proficiency in the essential skills of reading, writing, arithmetic, and so on. At its worst it gave the parent a chance to gloat over the neighbors whose children did not receive such good marks.

I. THE POINT OF VIEW OF NEW-TYPE REPORTS

Many statements have been issued which deal with the philosophy or the point of view of newer types of home reports. One of the best of these comes from the laboratory schools of the Colorado State College of Education at Greeley. Under the direction of Dr. William L. Wrinkle many experiments were carried out in which various types of modification were used. From this experimentation came a number of generalizations or principles which guided the school staff in its thinking on this problem.¹

GENERALIZATIONS BASIC TO SYSTEM OF MARKING AND REPORTING

1. The traditional marking system cannot provide an intelligent solution of the administrative problems of student guidance, promotion, motivation, and graduation.

2. The elimination of the competitive marking system would compel teachers to depend more on intrinsic motivation, worthwhile materials, and sound methods of instruction, by depriving poor teachers of the whip by which the child is forced to engage in meaningless activities through procedures which are unlikely to be conducive to continued activity.

3. No single symbol can be an intelligible index of student achievement unless the achievement evaluated represents a single outcome, or unless the achievement of several outcomes may be assumed to be identical.

4. Any adequate plan for the evaluation of student experiences will necessarily require as many separate evaluations as there are separate things evaluated.

5. Evaluations should be made in relation to the purposes of the experiences promoted by the school and their appro-

¹ WRINKLE, WM. L. *Marking and Reporting*; an unpublished report of five years of experimentation at the secondary school of the Colorado State College of Education, quoted in SPEARS, HAROLD. *The Emerging High School Curriculum*. New York: American Book Company, 1940, pp. 210-212.

priateness to the abilities and needs of the pupils as individuals.

6. Students vary in their ability to achieve the objectives of the educational program.

7. Harm rather than good is likely to result from the periodic receipt of reports showing inferior achievement, if the student has done his best, or from reports showing superior achievement, if the student has not done his best.

8. The purpose of general public education is not to discourage students from continuing the school program; students who consistently receive low or unsatisfactory marks are unlikely to be enthusiastic about continuing in the school.

9. Justification for any scheme of rating in the school is found in the increased possibility of producing educationally desirable changes in the individual; invidious tagging of the student makes no fundamental or constructive contribution to the pupil or to anyone else.

10. An individually appropriate and worthwhile curriculum needs no extrinsic devices to ensure application on the part of the student.

11. Good teaching does not demand coercive devices to ensure individually appropriate learning by students.

12. The form of the report is not of fundamental significance. A blank sheet of paper in the hands of an intelligent teacher is perhaps the best form for use in reporting. It should be recognized, however, that this type of reporting is susceptible of degeneration into stereotyped reports of little meaning or value.

13. The student's experiences, his successes, difficulties, abilities, and inabilities should be the subject of frequent conversations between teacher and student. Students should be encouraged to take the initiative in asking for such conferences.

14. The likelihood of misunderstanding by parents in the interpretation of reports increases in proportion to the number of details included in the report.

15. Reporting on all students at one time may stimulate competitive comparisons; if such stimulation is not a purpose of the reporting, then reports should be made at different times to discourage such invidious comparisons.

16. The most easily interpretable form of evaluation is the scale-type of evaluation by which the individual is classified according to descriptive characterizations.

17. The writing of adequate, detailed statements regarding each student for report purposes is not feasible for teachers having the usual number of students enrolled in classes.

18. To ensure an adequate understanding by parents of the status of the student, a conference should be arranged between the parents and the counsellor or teacher for oral discussion of individual cases.

19. Check lists utilizing the best features of the scale-type evaluation, the anecdotal record, and the conference plan should be developed for the evaluation of (a) general outcomes with which the total school program is concerned, and (b) more specific outcomes relating to each of the various areas of the curriculum.

20. A summary form of evaluation for distribution to parents should be developed, which will focus attention on desired outcomes of the school program that have been analyzed in detail by the check lists.

The new type of report implied in the above statement stimulates a much broader concept of reporting than does the traditional one, and calls for broader and more comprehensive teacher activity in collecting essential data. Some of these activities will be brought out in the discussion to follow.

II. TRENDS IN HOME REPORTS

Report cards of one type or another are used almost universally, and have long furnished the most direct line of contact between the home and the school. Many variations have been developed, some of them related to stated points of view, aims, and procedures of the school from which they are issued, others not. In the main, however, the report card is more indicative of the real aims of the school than are the stated or publicized aims. What is "marked" is usually what is "taught."

The letter form of marking is more generally used than any other. Changes are being made, however, and many schools are now vitally interested in the problem of devising more accurate methods. Trends seem to be in the following direction:¹

¹ *Procedures in Large Unit Teaching* (Curriculum Bulletin No. 4). Montgomery, Ala.: State Department of Education, 1937, pp. 90-91.

1. Rivalry through competitive marks is minimized. The effort is to show the pupil's progress in terms of his own capacity for achievement rather than by contrasting his achievement with that of someone else.

2. Where marks are used, a scale with a few points is being suggested.

3. Reports are sent home at less frequent intervals than monthly.

4. Increasing attention is being given to health items.

5. Schools are evaluating other traits in addition to subject-matter achievement. Stress is laid upon the growth of each pupil in the qualities, interests, and abilities accepted as the aims of the school. The inclusion of several social traits is desirable, since this form of report calls attention of teachers, parents, and pupils to the larger scope of the school in developing and appraising the whole child as a social individual.

6. The traditional skills are absolutely necessary to the growth of children in desirable directions. The use of the race heritage depends upon the functional teaching of the tool subjects. The ability to use these tools in life situations is, therefore, of great importance.

7. The general character and details of the report are being planned as a means of bringing the child and parents to a closer understanding of school life.

8. Formal report cards are being replaced by letters to parents, or interviews with them.

9. As in other efforts to improve practices, important changes in reports to parents grow out of careful study by teachers and mutual understanding between parents and teachers.

One of the most interesting developments is the attempt to eliminate the work involved in sending out all cards at stated intervals. Some schools are now allowing teachers to make a report only when it fits the needs of the pupil.

III. EXAMPLES OF NEWER SCHEMES

TRADITIONAL TYPE VARIATIONS. We now show, first (Samples 1-4), several variations of the traditional report card which illustrate certain minor departures although the basic principle of reporting achievement in the usual areas is retained; and second (Samples 5-11), several cards that illustrate modified forms of reporting.

PUPIL'S REPORT — FIRST SEMESTER

Periods

Subjects	1	2	3	Exams. Finals
Arithmetic.....				
Drawing.....				
Lang.-Gram.				
History.....				
Physiology.....				
Penmanship.....				
Reading.....				
Word Study.....				
Geography.....				
Gen. Science.....				
Civil Govt.....				
Music.....				
Department.....				
Days Absent.....				
Times Tardy.....				

The following system of marking will be used:

- A — (Excellent) 95 to 100
- B — (Very Good) 88 to 94
- C — (Good) 81 to 87
- D — (Fair) 75 to 80
- E — (Failure) Below 75

This system must be used by all teachers.

PUPIL'S REPORT — SECOND SEMESTER

Periods

Subjects	1	2	3	Exams. Finals
Arithmetic.....				
Drawing.....				
Lang.-Gram.				
History.....				
Physiology.....				
Penmanship.....				
Reading.....				
Word Study.....				
Geography.....				
Gen. Science.....				
Civil Govt.....				
Music.....				
Department.....				
Days Absent.....				
Times Tardy.....				

INFORMATION CODE

- 1 means Capable of doing better
- 2 means Danger of failure
- 3 means Incomplete
- 4 means Work late

This information code must be used when necessary to furnish full information to parent.

Sample 1

The Ingham County report shows an attempt to furnish some information in respect to pupil effort as well as subject-matter achievement.

HABITS AND ATTITUDES

To the Parents:

Believing that desirable habits and attitudes of mind are at least of equal importance with attainments in school subjects, we are indicating some of the traits and habits which the school is emphasizing and which make for good citizenship, both in the school and the community. We bespeak your co-operation in assisting us in achieving these worthy objectives.

In rating these traits, Exc. means Excellent; S means Satisfactory; U means Unsatisfactory.

	PERIODS		
	1	2	3
WORK OR STUDY HABITS:	<i>Exc.</i>	<i>Exc.</i>	<i>Exc.</i>
Uses time to good advantage - - -			
Is attentive - - - - -			
Is working to capacity - - -			
SOCIAL HABITS AND ATTITUDES:	<i>Exc.</i>	<i>Exc.</i>	<i>Exc.</i>
Obedient - - - - -			
Courteous - - - - -			
Dependable - - - - -			
Co-operative - - - - -			
Neat - - - - -			
Responsive to suggestions - -			
Careful of books and other property			
Self-control - - - - -			
HEALTH HABITS:	<i>S</i>	<i>S</i>	<i>S</i>
Posture in sitting, standing, walking			
Seems to follow general rules of health			

SCHOOL SUBJECTS

SYSTEM OF MARKING:

We are giving only three ratings or markings—Excellent (Exc) Satisfactory (S), Unsatisfactory (U). We believe these will give parents sufficient information as to the progress of their child without overemphasizing the competitive motive. Sub-topics under each subject will indicate to the parent the phases of the subject in which the child is strong or weak, as the case may be. A check mark is used when the teacher feels that the parent's attention should be called to that particular item. When no check mark appears, the child's work may be regarded as satisfactory.

	PERIODS		
	1	2	3
READING:	<i>S</i>	<i>S</i>	<i>S</i>
Understands what he reads - - -			
Is fond of reading - - - - -			

Sample 2

Reports on the Pontiac, Michigan, card are in terms of subject-matter achievement, but an attempt is made to define the proficiency expected in the various areas.

SCHOOL SUBJECTS

		PERIODS		
		1	2	3
Reads aloud clearly and with understanding - - - - -				
Improving, but not up to grade level				
SPELLING:		<i>Exc.</i>	<i>Exc.</i>	<i>Exc.</i>
Is observant of spelling difficulties		<i>Yes</i>		
Applies his spelling to other subjects		<i>yes</i>		
WRITING:		<i>S+</i>	<i>S</i>	<i>S</i>
Maintains standards expected of his grade		<i>yes</i>		
Applies his writing to his other work				
LANGUAGE:		<i>Exc.</i>	<i>Exc.</i>	<i>Exc.</i>
Expresses his ideas well in written work		<i>yes</i>		
Expresses his ideas well orally - -		<i>yes</i>		
Tries to correct common errors - -		<i>yes</i>		
ARITHMETIC:		<i>S</i>	<i>S+</i>	<i>S</i>
Has control of the subject-matter of his grade - - - - -				
Attempts to be accurate in his work				
Has trouble with - - - - -				
SOCIAL SCIENCE	GEOGRAPHY:	<i>S</i>	<i>S</i>	<i>S</i>
	Has control of geographic facts required of his grade - - - - -			
	Contributes outside material - - - - -			
	HISTORY:	<i>S</i>	<i>S</i>	<i>S</i>
	Has control of historical facts required of his grade - - - - -			
	Contributes outside material - - - - -			
SOCIAL STUDIES AND ACTIVITIES:		<i>S</i>	<i>S</i>	<i>S</i>
Is developing an appreciation of community life and workers - -				
Contributes information to the group				
Does clear thinking - - - - -		<i>yes</i>		
MUSIC:		<i>S</i>	<i>S</i>	<i>S</i>
Can read musical notation - -				
Sings with good tone quality - -				
Is a monotone - - - - -				
Gaining in appreciation of good music				

Pupil *William Riley*..... PUPIL'S REPORT CARD

This is a report of the progress your child has made in school subjects. The marks used are the letters A, B, C, D, and E, which appear at the top of the columns. The number of pupils receiving each mark shows opposite the name of the subject. The number in one column has a circle drawn around it, which indicates the group for your child. The graph indicates the progress of your child as compared with the progress of the other members of his classes.

Subjects	FIRST SEMESTER										SECOND SEMESTER										Yearly Grade																	
	1st Period					2nd Period					3rd Period					1st Period						2nd Period					3rd Period											
	NUMBER RECEIVING					NUMBER RECEIVING					NUMBER RECEIVING					NUMBER RECEIVING						NUMBER RECEIVING					NUMBER RECEIVING											
	No. in Grade					No. in Grade					No. in Grade					No. in Grade						No. in Grade					No. in Grade											
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E		A	B	C	D	E	A	B	C	D	E	Sem. Exam	Sem. Grade					
Spelling	49	10	19	5	1	49	12	20	10	7	0	50	17	23	5	2	3	0	47	9	23	7	5	0	49	20	5	2	2	18	21	0	B	C				
Reading Lit.	49	9	0	16	11	4	49	6	16	12	13	2	50	6	18	18	8	3	0	47	6	17	12	10	2	49	7	17	13	7	3	18	15	14	8	3	C	
Writing	49	5	13	17	0	0	49	5	12	19	13	0	50	9	15	21	5	0	49	3	20	20	0	0	49	5	17	21	5	1	18	14	11	12	1	0	C	
Arithmetic	49	5	14	0	15	4	49	7	14	13	10	3	50	6	13	14	12	5	0	47	5	14	12	9	3	49	9	9	18	9	4	18	7	20	9	5	C	
Lang. Eng.	49	3	14	7	11	4	49	6	12	16	21	3	50	5	12	18	8	4	0	47	6	14	11	2	49	6	16	15	9	3	18	13	10	19	3	4	C	
Geog. Soc. Sci.	49	3	13	21	3	4	49	6	8	20	11	4	50	6	8	12	5	0	47	4	13	9	3	4	49	9	6	11	3	18	12	11	19	3	1	C		
U. S. Hist.	49	3	9	22	5	4	49	6	15	19	10	4	50	6	11	16	12	5	0	47	5	14	2	14	2	49	6	16	12	12	3	18	12	11	14	13	B	C
Health	49	7	16	7	12	7	49	6	14	11	4	50	6	13	20	10	2	0	47	5	15	6	3	27	0	5	9	2	27	0	4	16	7	1	0	C		
Music	49	7	12	23	6	0	49	11	13	15	5	4	50	11	16	19	4	0	47	10	13	15	4	0	49	6	16	9	8	0	18	6	20	20	2	0	C	
Art	49	3	13	23	5	0	49	6	16	30	7	0	50	6	12	22	6	0	47	3	20	18	6	0	48	4	21	20	3	0	18	6	21	20	3	0	C	
Physical Ed.	49	1	23	10	0	48	4	25	13	1	0	49	6	31	12	0	0	0	46	1	25	20	0	0	48	1	27	3	0	0	47	3	24	20	0	0	C	
Conduct	49	10	27	0	1	0	49	12	23	10	3	0	50	13	17	20	0	0	47	19	20	12	5	0	49	19	17	3	0	18	14	12	19	0	0	C		
Effort	49	5	13	29	7	0	49	11	23	9	7	0	50	5	23	3	7	0	47	6	16	6	0	49	7	19	20	3	0	4	10	16	20	1	0	C		
Promotion in Danger																																						

SIGNATURE OF PARENT OR GUARDIAN

1st Period *Mrs. R. T. Riley*
 2nd Period *Mrs. R. T. Riley*
 3rd Period *Mrs. R. T. Riley*
 4th Period *Mrs. R. T. Riley*
 5th Period *Mrs. R. T. Riley*
 6th Period *Mrs. R. T. Riley*

EXPLANATION OF MARKS:

A—Superior
 B—Above Average
 C—Average
 D—Below Average
 E—Falling

ATTENDANCE RECORD

Six-week Periods	Days Present	Days Absent	Times Tardy
First	34	2	0
Second	27	3	0
Third	30	0	0
Fourth	29	1	0
Fifth	29	1	0
Sixth	33	1	0
Total	182	6	0

Sample 3

An interesting variation of the traditional report card comes from the Bridgeport, Illinois, Public Schools (1936). The number of A's, B's, C's, D's, and E's given in the class is indicated by the numbers written in the squares. The marks given the individual pupil are indicated by the circles. When connected, these give a profile of subject-matter grades, indicating at a glance the subjects in which the pupil is proficient or deficient.

Public Schools

CITY OF FERNDALE

Ferndale, Michigan



School Report

of

School Grade

This report is made to cover the work of the Kindergarten and first six grades, therefore, items not pertinent to the age or grade will not be marked.

The purpose of this report is to give to parents the most practical and helpful information concerning the work and progress of their children in school, to obtain helpful suggestions from home, and to eliminate many of the recognized faults of the former report cards.

Sample 4

The Ferndale report represents an elaborate attempt to define aims in respect to proficiency in traditional areas, but also includes ratings in health habits, attendance, and citizenship traits.

This report is divided into four sections with explanations and instructions for each section.

SECTION I

Attendance

	10th week	15th week	20th week	10th week	15th week	20th week
Days Present.....						
Days Absent.....						
Times Tardy.....						
Height.....						
Actual Weight.....						
Normal Weight.....						

SECTION II

Health and Home Report

All facts asked for in this section will be helpful to the school. It is to be hoped that parents will fill this out as completely as possible. This part need not be marked the second semester unless there is some change.

	FIRST SEMESTER	SECOND SEMESTER
1. At what time does he arise in the morning?.....		
2. At what time does he go to bed?.....		
3. Does he eat his breakfast?.....		
4. Does he drink coffee or tea?.....		
5. Does he sleep with his window open?.....		
6. Is he regular in habits of intestinal elimination?.....		
7. Are there any physical defects that would retard his progress, such as headache, toothache, earache, etc.?.....		
8. Does he seem to enjoy school?.....		
9. Does he worry over school?.....		
10. What subjects seem most difficult?.....		

Sample 4

PAGE 2 OF THE FERNDALE REPORT

SECTION III

Citizen Habits

This section reports on habits which are desirable for good citizenship. The mark “—” indicates that the child seems unsatisfactory in the habit marked.

The mark “av” indicates that the habit is formed to a fair degree but that improvement is possible.

The mark “+” indicates the habit seems entirely satisfactory.

If there is no mark it indicates that there has not been sufficient opportunity to judge, or that the particular habit is not being considered at this stage. Unsatisfactory habits need the closest cooperation between school and home to bring about improvement. The school would appreciate the mark of the parent as well as that of the teacher in this section, twice each semester.

	10th week		20th week		10th week		20th week	
	Pr.	Tch.	Pr.	Tch.	Pr.	Tch.	Pr.	Tch.
CAREFULNESS Neatness, orderliness and thoughtfulness in handling books and other property-----								
COOPERATION Willingness to act or serve at the work and play-----								
COURTESY Kindness to others as shown both in manner and action-----								
FAIRNESS Readiness to respect the rights of others-----								
INDUSTRY Firmness of purpose to try hard all the time; sustained effort-----								
INITIATIVE Readiness to go ahead without being driven; self-direction-----								
PROMPTNESS Willingness to act or serve at the right time-----								

Sample 4

PAGE 3 OF THE FERNDALÉ REPORT

SECTION IV

This section is a report of skills and habits with reference to academic subjects. By skills we mean how well the child can read, write, spell, etc. By habits we mean what is being done toward accomplishing these skills.

Because two different sorts of tasks are reported, some subjects are divided into two groups. Group I is a report on the skills and will show how well the child does in comparison with those of his grade, as determined by standard tests. Marks will be placed in Group I only when standard tests are given. Group II will be the marks used by the teacher and represent her estimate of the formation of proper habits.

In Group I the mark "—" will mean that the child is in the lowest quarter, "Av" will mean that he is in the second or third, or two middle quarters, and "+" will mean that he is in the upper quarter.

By quarters is meant that pupils are arranged in order from the highest rated to the lowest rated by the test; the highest 25 per cent in the first quarter, etc.

The marks for Group II will be the same as for citizenship and will have the same significance.

	10th week	15th week	20th week		10th week	15th week	20th week
READING: General Rating							
Group I — Speed Rate							
Comprehension							
Group II — General understanding of what is read							
Reading without lip move- ment or pointing when reading silently							
Mastering new words for himself							
Reading good books in and out of school							
SPELLING: General Rating							
Group I — Ability to spell in test							
Group II — Spelling ability in written work							

Sample 4

PAGE 4 OF THE FERNDALDE REPORT

	10th week	15th week	20th week	10th week	15th week	20th week
LANGUAGE: General Rating						
Group I — Ability to use English as shown by test.....						
Group II — Exercising care in the use of correct English.....						
Speaking distinctly in a pleasant, well pitched voice.....						
Recognizing errors and striving to correct them.....						
Listening attentively.....						
Reciting poems with appre- ciation.....						
Expressing himself orally.....						
Expressing himself in writing.....						
ARITHMETIC: General Rating						
Group I — Number combination.....						
Problem analysis.....						
Group II — Mastering number facts.....						
Doing work accurately.....						
Depending upon himself.....						
Attempting to improve.....						
SOCIAL SCIENCE: General Rating						
Group II — Reading understandingly.....						
Telling and remembering what is read.....						
Working out projects with enthusiasm.....						

Sample 4

PAGE 5 OF THE FERNDAL REPORT

	10th week	15th week	20th week		10th week	15th week	20th week
FINE AND INDUSTRIAL ARTS: General Rating							
Group II — Appreciating and caring for beauty in objects of household or school use and in the out- of-doors.....							
Discovering the usefulness and adapting to his needs different materials and tools; clay, paper, wood, paint, etc.....							
Holding himself to good standards of workmanship.....							
Domestic Science.....							
Manual Training.....							
WRITING: General Rating							
Group I — Legibility as shown by writ- ing scale.....							
Group II — Doing written work neatly.....							
MUSIC: General Rating							
Group II — Enjoying singing or listening to good music.....							
Taking part in singing.....							
Learning to read music.....							
HEALTH EDUCATION:							
Physical training.....							
Health habits.....							

Sample 4

PAGE 6 OF THE FERNDALE REPORT

_____ should work for

First Name

improvement or development in:

FIRST SEMESTER			SECOND SEMESTER		
1st Period	2nd Period	3rd Period	4th Period	5th Period	6th Period

CHARACTER, PERSONALITY, AND EDUCATIONAL TRAITS

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. Dependability 2. Ambition 3. Interest in work 4. Persistence 5. Resourcefulness 6. Tidiness, Neatness 7. Courtesy 8. Friendliness 9. Truthfulness and honesty 10. Cheerfulness 11. Sense of humor 12. Self control 13. Sociability 14. Tolerance of others' viewpoints 15. Self confidence 16. Alertness, responsiveness 17. Unselfishness 18. Poise 19. Punctuality 20. Attentiveness to job at hand 21. Planned work habits 22. Good posture and carriage 23. Good health habits 24. Enunciation and articulation 25. Pronunciation 26. Spelling 27. Vocabulary | <ol style="list-style-type: none"> 28. Written English 29. Reading speed 30. Reading comprehension 31. Variety in reading 32. Reading of magazines and newspapers 33. Reading of better novels 34. Knowledge of mathematics and the applications 35. Interest in the physical sciences 36. Knowledge of scientific principles 37. Reading of popular science articles 38. Knowledge of historical information 39. Reading of history, biography, historical fiction 40. Geographical information 41. Knowledge of current social problems 42. Foreign language background 43. Appreciation of art, music, dramatics 44. Music techniques 45. Handicraft abilities 46. Penmanship 47. Planned career 48. ----- |
|--|--|

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Sample 5

In this report card, subject-matter areas are entirely abandoned. The face carries this explanation to parents: "The purpose of this report is to recognize that the whole child goes to school. Education is broader than training in the school subjects. Listed on the other side of this card are some traits on which to work for improvement or development. It is hoped that these suggestions may be helpful. We invite parents to confer with us."

CICERO PUBLIC SCHOOLS

Confidential Report of

(Name)

School ----- Grade ----- Room -----

Year 194 ----- 194 ----- Teacher: -----

TO THE PARENTS:

Our teachers are always interested in improving the conditions under which the children of Cicero grow and develop. The school is an important part of the life of the child, and parents and teachers alike are interested in seeing that it serves the needs of each child. This is a report of your child's school life as our teachers see it. It is submitted with an invitation for you in return to give suggestions that will enable us to meet his needs more adequately.

Each child is marked in comparison with his own record and ability. "S" means that progress is satisfactory. "U" means unsatisfactory progress or that improvement is desirable. Space is provided for comments by the teacher since single words do not adequately describe special interests and abilities, needs, citizenship development, and work habits. Space also is provided for your signature and comments.

This is a confidential report. Both parents and teacher should express views frankly and with the assurance that the information will not be used as a basis for criticizing the child or for unjust comparison with other children. When the contents are discussed with the child it should always be done privately and with the attitude of sympathetic understanding and a desire to praiseworthy accomplishment.

Each teacher has observed many interesting facts about your child in his school life which she would like to share with you. She would welcome reports of your child's interest and activities as you have observed them in your home.

We most cordially invite you to help us in the education of your child by visiting classes and participating in the life of the school.

Sincerely yours,

PRINCIPAL

DR. C. A. WEBER
Superintendent

Sample 6

The Cicero, Illinois, card attempts to furnish individual teacher comments on the child in subject-matter areas, as well as to provide for an "S" or "U" rating.

ATTENDANCE RECORD

[illegible][illegible]

SOCIAL STUDIES — LANGUAGE — READING

1. Shows ability in finding and organizing information about problems.....
2. Usually contributes to discussion and other group activities.....
3. Shows increasing ability to see relationships and to draw upon information as a help in meeting new problems.....
4. Expresses thought well:
(a) Orally.....
(b) In writing.....
5. Neat and accurate in writing work.....
6. Reads orally in an effective manner.....
7. Reads silently with understanding and at a satisfactory rate.....
8. Shows a growing interest in reading for personal satisfaction.....
9. Shows evidence of worth-while use of leisure time.....

ARITHMETIC

1. Understands the meaning of numbers.....
2. Reasons well in solving problems.....
3. Uses the fundamental skills readily and accurately.....

SCIENCE AND HEALTH

1. Shows interest in finding information which will help him understand his environment.....
2. Employs scientific attitudes and methods in dealing with his problems
3. Makes worth-while contributions to the science group.....
4. Understands health values.....
5. Understands safety values.....

Date-----

COMMENTARY SHEET
FIRST REPORT — FIRST SEMESTER
Personal and Social Development

Social Studies — Language — Reading

Arithmetic

Science and Health

Sample 6

PAGE 3 OF THE CICERO REPORT

Music

Art

Practical Arts

Physical Education

PARENTS' SIGNATURE AND COMMENTS

Signatures: -----

Comments: -----

Sample 6

PAGE 4 OF THE CICERO REPORT

I. PERSONALITY COMMENTS:

II. ACADEMIC RATING:

1. Achievement and rate of progress outstanding in:
2. Achievement and rate of progress above the usual level for this group in:
3. Achievement and rate of progress at the usual level for this group in:
4. Achievement and rate of progress below the level usual for this group in:
5. Achievement below the level usual for this group, but present rate of progress satisfactory in:
6. Achievement satisfactory, but rate of progress is not commensurate with capacity, i.e., progress is below capacity in:
7. Special help is being given in:

Sample 7

The Tower Hill School report, page 2 of which is shown here, differs from preceding ones in that no attempt is made to provide ratings in all subject-matter areas.

III. WORK HABITS:

	Usual or Above	Below Usual	Comments
Accuracy in following directions			
Accuracy in use of skills			
Efficiency in use of time and energy			
Neatness and orderliness			
Self-reliance			
Persistence in completing work			
Thoughtful participation in discussion			

IV. COMMENTS ON ACHIEVEMENT IN ACADEMIC SUBJECTS:

Sample 7

PAGE 3 OF THE TOWER HILL SCHOOL REPORT

V. COMMENTS ON ACHIEVEMENT IN SPECIAL SUBJECTS:

VI. RECOMMENDATIONS:

Teacher

Director of Elementary School

Sample 7

PAGE 4 OF THE TOWER HILL SCHOOL REPORT

HASTINGS PUBLIC SCHOOLS

REPORT CARD

FOR

GRADES I II III

Report of

Grade

School Teacher

ATTENDANCE

1

1

Total Half Days of School

Half Days Absent

2

2

1

Times Tardy

2

TO PARENTS:

Parents are requested to sign and return this Report promptly.

Signature shows that you have received this Report.

Parent's Signature

1 2

Sample 8

The Hastings report represents considerable development away from the original letter-marking type of card. Parents as well as teachers are asked to add their remarks to the card. In case of disagreement a conference is urged.

TO THE PARENT:

School reports are of value if they help the parent to understand the child's growth as the school sees it.

Parents are urged to comment upon the progress of their child in the space provided, in order that the school may better understand the child's growth as the home sees it.

Any *unusual developments* observed which should have the immediate attention of the parents will be noted in the report, and *personal conference* between parent and teacher should be arranged.

Not every item will be checked every time by the teacher. If an item is not checked, it indicates that it has not yet been observed by the teacher sufficiently to make definite statement regarding the item.

The items are checked satisfactory or unsatisfactory according to the child's ability. If a parent wishes to know how the achievement of his child compares with the goals set up for the grade as a whole he is cordially invited to confer with the teacher.

D. A. VAN BUSKIRK,
Supt. of Schools.

Teacher.



Sample 8

PAGE 2 OF THE HASTINGS REPORT

REPORT IN ATTITUDES AND HABITS

	Black Check — Satisfactory. Red Check — Unsatisfactory.			
	Parents: In the column headed "Parents' Check," please check the starred (*) items "satisfactory," or "unsatisfactory," as noticed at home. Make added remarks in column headed "Parents' Comments."			
	Teachers' Check	Parents' Check	Teachers' Comment	Parents' Comment
	Date	Date		
HEALTH				
*Has good general physical condition				
*Does not tire easily				
*Has good posture				
*Practices habits of safety				
*Takes pride in appearance				
SOCIAL-MORAL ATTITUDES				
*Gives in willingly for good of all				
*Cooperates				
*Is dependable				
*Controls self				
*Practices fair play				
*Respects public and private property				
*Is courteous				
WORK HABITS				
*Is willing to work				
*Plans and carries out new projects				
*Responds readily to suggestions				
*Follows directions thoughtfully				
*Concentrates				
*Completes work begun				
*Is neat and orderly				

Signs of Special Talent:

Sample 8

PAGE 3 OF THE HASTINGS REPORT

REPORT IN STUDIES ACCORDING TO ABILITY

	Parents: In the column headed "Parent" please check starred (*) items.											
	Child doing very best he can				Child not doing best he can				Parent and Teacher should confer			
	1	2	1	2	1	2	1	2	1	2	1	2
	Teacher	Teacher	Parent	Parent	Teacher	Teacher	Parent	Parent	Teacher	Teacher	Parent	Parent
ARITHMETIC												
Understands the meaning of number												
*Is able to count												
*Reads and writes numbers correctly for his grade												
*Is learning with accuracy the number facts taught												
*Is learning the meaning of mathematical terms												
*Makes accurate use of number facts in problem solving												
ART												
*Sees beauty in things about him												
*Expresses his ideas freely												
*Expresses original ideas												
*Follows directions accurately												
*Uses crayons neatly												
*Is careful in the use of materials												
LANGUAGE												
*Has a keen interest in poems and stories												
*Has ability to retell simple stories												
*Tells interesting incidents simply and clearly												
Takes active part in dramatizations												
*Makes an effort to use correct English												
*Uses voice pleasingly												
MUSIC												
*Shows an active interest in rhythms and music												
*Sings short songs correctly alone												
*Sings many songs pleasingly												
Takes active part in group singing												
Contributes to group singing by helpful attention												

Sample 8

PAGE 4 OF THE HASTINGS REPORT

TEACHERS

PARENTS

PAGE 5 OF THE HASTINGS REPORT

SOCIAL STUDIES

Include Nature Study, Geography,
and History

*Shows active interest in his sur-
roundings.....

*Is accurate in observation.....

Collects and brings interesting
books, pictures, objects, and nature
materials for group use.....

*Investigates independently.....

*Shows sympathetic interest in pro-
tecting plant and animal life.....

*Talks freely at home about subjects
discussed in school.....

WRITING

Writes easily.....

*Writes plainly.....

Practice exercises show steady
improvement.....

*Written work is done in best
penmanship.....

READING

*Shows interest in learning to read..
Shows a lively interest in materials
of reading.....

*Reads voluntarily during free time.....

*Reads many kinds of materials
within his ability to understand.....

*Chooses books of gradually increasing
difficulty.....

*Understands what he reads silently.....

*Reads aloud smoothly and under-
standingly.....

*Helps himself to work out new words.....

*Uses eyes, not lips, in silent reading.....

*Keeps the place without pointing.....

Follows written directions accurately.....

SPELLING

*Makes steady improvement in
learning to spell.....

*Is careful to use correct spelling
in written work.....

Sample 8

PAGE 6 OF THE HASTINGS REPORT

Parent's Report

The following questions may be suggestive to parents

1. What habits and attitudes would you like to have us encourage?

Discourage?

2. Do you feel that your child should receive extra help? Why?

3. Does your child have a physical condition that might retard his school work?

4. Other questions or remarks:

Sample 8

PAGE 8 OF THE HASTINGS REPORT

THE CITY SCHOOLS
of
LONG BEACH, CALIFORNIA

Report of

School..... Grade.....

4, 5, or 6

First

Report Date..... Teacher.....

Second

Report Date..... Teacher.....

EXPLANATION

This report is not intended to compare the work of one pupil with that of others. It is a message to parents to acquaint them with the experience of the pupil in his school life, especially in terms of his growth as compared with his ability to progress.

This report may be supplemented whenever it is thought best, by a letter from the school to the home or from the home to the school. To insure the privacy of such correspondence, these notes should be separate from this card.

SYMBOLS USED IN THIS REPORT

✓ — Does work which a pupil of his or her ability should do.

* — A pupil of his or her ability should do better work.

x — Effort or achievement worthy of special commendation.

Note: If an item is not marked the parent will understand that either the pupil is not having that type of school experience during the period, or the teacher has insufficient data upon which to form judgment.

Sample 9

Another development away from the traditional type is found in the Long Beach, California, report. The card is filled out only twice each semester.

TYPE OF SCHOOL EXPERIENCE	Mid Semester	End Semester
Individual Work and Study Habits		
Planning work.....		
Starting work promptly.....		
Using time and materials wisely.....		
Consulting dictionary for spelling.....		
Checking and correcting mistakes.....		
Following directions.....		
Using originality.....		
Participation in Group Work		
Helping to plan the enterprise.....		
Carrying share of the work.....		
Showing good sportsmanship.....		
Working cheerfully with others.....		
Persisting in work until completed.....		
Judging frankly success or failure of results.....		
Desirable Traits		
Keeping desk and work in order.....		
Maintaining a friendly attitude.....		
Being frank and honest.....		
Being careful of school property.....		
Health		
Knowing how to keep well.....		
Keeping well.....		
Standing and sitting properly.....		
Keeping emotions under control.....		
General Information in Field of		
Social Studies (Geography, History, Citizenship).....		
The World and Its Life (Science).....		
Current Events.....		
Arithmetic		
Manipulating numbers.....		
Solving problems by reason.....		
Being able to make practical use of arithmetical skill.....		

Sample 9

PAGE 2 OF THE LONG BEACH REPORT

TYPE OF SCHOOL EXPERIENCE	Mid Semester	End Semester
Spoken English		
Speaking clearly		
Speaking correctly		
Speaking with ease and poise		
Written English		
Writing clearly		
Writing correctly		
Vocabulary		
Ability to understand words		
Ability to use words		
Reading Skills		
Recognizing words		
Getting meaning from books		
Recalling the content		
Using information read		
Reading aloud		
Spelling Correctly		
Words in lists		
Words in composition		
Handwriting		
Writing so that it can be read easily		
Writing with reasonable speed		
Arts and Crafts		
Learning to discriminate between the beautiful and the less beautiful, or good and bad taste		
Enjoys working with clay, wood, paper, paint and crayons		
Acquiring skill in		
Drawing		
Painting		
Decorating		
Music		
Reading		
Singing		
Playing an instrument		
Enjoying good music		
Manual Skills in		
Following directions		
Showing originality		
Note: For items left blank see note at bottom of the front page.		

Sample 9

PAGE 3 OF THE LONG BEACH REPORT

TYPE OF SCHOOL EXPERIENCE	Mid Semester	End Semester
Physical Education		
Showing skill in games.....		
rhythms.....		
Being a generous winner.....		
Being a good loser.....		
Use of Reference Works		
Finding help from the dictionary.....		
Looking up data in encyclopaedias.....		
Making wise choice and use of library books.....		

ATTENDANCE REPORT

	Days Present	Days Absent	Times Tardy
First Report			
Second Report			

Signature of Parent or Guardian

(It is preferable that both parents sign each report)

First
Report

.....

Second
Report

.....

Recommended for Entrance into

Grade..... Date.....

..... Teacher

..... Principal

Sample 9

PAGE 4 OF THE LONG BEACH REPORT

UNIVERSITY ELEMENTARY SCHOOL

State University of Iowa

School Year 1945-46

Report of

Grade

Year Ending May 24, 1946

Teacher

Principal

TO THE PARENTS

The purpose of this report is to furnish you with a general statement of the growth of your child and to acquaint you better with some of the problems that face us. Proper understanding between the home and the school is essential to efficient guidance in the development of the child. You are cordially invited to visit the school and confer with the teacher concerning your child.

Attendance by Periods

	1	2	3	4	Total
Days Present					
Days Absent					
Times Tardy					

Experimental Edition

Sample 10

This form deviates about as far as possible from the traditional letter-marking type. Incidents which reveal growth are reported rather than a specific rating of subject matter.

PROGRESS IN THE FIRST PERIOD September 17 to November 13

Teacher's Remarks: -----

We would appreciate a comment from the parents here: -----

Parent's Signature -----

PROGRESS IN THE SECOND PERIOD November 19 to January 25

Teacher's Remarks: -----

Parent's Remarks: -----

Parent's Signature -----

Sample 10

PROGRESS IN THE THIRD PERIOD January 28 to March 29

Teacher's Remarks: -----

Parent's Remarks: -----

Parent's Signature -----

PROGRESS IN THE FOURTH PERIOD April 1 to May 24

Teacher's Remarks: -----

Promotion Data: -----

Sample 10

**CHELTENHAM TOWNSHIP
PUBLIC SCHOOLS
REPORT TO PARENTS
FOURTH, FIFTH and SIXTH YEARS
Year 19 -19**

Name.....

School.....

Date.....

Sample II

This type of report furnishes a modified appraisal in all subject-matter fields but avoids the use of the word "unsatisfactory." Another feature is its inclusion of standardized test scores.

REPORT TO PARENTS

A pupil's progress is the mutual concern of parents and teachers.

This report card is an attempt to give parents an understandable report on the achievement and progress of the child.

A standard test is a test in nation-wide use. The pupil's standard test score shows his achievement in comparison with the normal score for his grade. The progress marks, N and S, represent the teacher's estimate of the quality of the work during the present report period.

N - Normal. Work during the period has been acceptable in quality and quantity.

S - Slow. Work during the period has not reached a satisfactory level in quality and quantity, or both.

Subjects	Progress in Report Period	Pupil's grade level on a standardized test
Reading		
Spelling		
Arithmetic		
Handwriting		
Language Arts		
Social Studies		
Music		
Art Activities		

Attendance Report: Days Present

Days Absent

Failures in Punctuality

Sample 11

PAGE 2 OF CHELTENHAM REPORT

Teacher's Comments and Recommendations

Teacher's Signature_____

Parent's Comment

Parent's Signature_____

Date_____

Sample II

PAGE 3 OF CHELTENHAM REPORT

THE LETTER REPORT. Many schools have abandoned a report card but have not necessarily abandoned reporting. They believe that the personal note type of report has the advantages of informality, of directness, of personal direction, of stressing development of the whole child, and of giving fairly complete information about traits needing attention. These notes are not necessarily negative but include positive statements concerning the child's growth. It is thought best to mention good characteristics and then to describe areas in which the child needs attention.

A more or less typical home report in the form of a note is included here to illustrate some of the points that have been mentioned. The boy described is a first-grade pupil.

Sample 12

Dear Mr. and Mrs. Swanson:

As you probably know, we teachers no longer issue formal report cards. Instead, we prefer to write notes to the parents about the progress that children are making at school.

Billy is a very likable boy whom it is a pleasure to have in school. He makes friends easily with his classmates and with adults; for example, the janitor. Everyone likes him and is glad to see him.

In his school work, Billy is making excellent progress. He reads with much more than average ability for his grade. He is quite artistic and has shown signs of originality in some of the drawings he has made. Although Billy does not like number work very much, he does as well in this activity as most of the children. He is learning to spell and to write short sentences. While Billy is not particularly musical, he sings with a great deal of enthusiasm.

Billy is one of the natural leaders of the group. When difficulties arise, the other children look to him for suggestions. He almost always has something to offer. This ability to lead the other children sometimes leads to a little trouble for Billy. To the suggestions given by others he is often quite intolerant. He is inclined to minimize what the others have to offer and to insist on his own way being followed. Billy needs to be led to see that other children have a right to make suggestions and that the group should be left free to adopt the device that seems best to them.

In looking after personal belongings Billy also needs some help. He is inclined to throw his coat and cap on the floor rather than hang them on his hook. Often his rubbers are left in the aisle where they may be kicked or stumbled over by the other children. Perhaps you can help with this, Mrs. Swanson, by insisting that Billy take care of his clothes and playthings at home if he does not already do so.

All things considered, you can be happy over the development shown by Billy. He is growing normally in height and weight and seems to be quite healthy. He usually gets along well with the group and with everyone else with whom he comes in contact. He is well adjusted to the school and apparently is happy while here.

When you have time, one or both of you, why don't you come to school and visit us? Your coming would be an inspiration to Billy and would give you and me an opportunity to cooperate in his development in desirable ways. We would be very happy to have you come at any time.

Very sincerely yours,
(signed) *Genevieve Collins*

One patent objection to the use of notes as reports is the amount of time required to prepare them and the real effort it takes to prevent them from becoming stereotyped. These faults are not inherent and can be overcome.

It is not necessary to send notes at regular intervals of four, five, or six weeks as is the practice with report cards. In some instances twice a semester is often enough, and they need not all be sent at the same time. After parents become educated to the system, they do not expect a report until sometime after the middle of the term. The notes can then be sent out over about a nine-week period. With thirty-six children in the room, only four have to be prepared each week. This number does not require a great deal of labor, and the teacher is fresh enough to keep them significant and individualized.

A variation from the plan in which the notes are written entirely by the teacher, is the plan of having the children analyze their progress first and then having the teacher comment on the analysis. Obviously this plan can be used only in the upper grades of the elementary school where the children can express themselves fairly well in writing. Obvi-

ously, too, the children have to be constantly informed about the goals toward which they are working. The best way to do this, of course, is to give the children a voice in the cooperative planning of these goals. A sample of this sort of report is here included. The girl writing the letter was in the fifth grade.

Sample 13

Dear Mother:

I am going to try to tell you about how I am getting along at school. Miss Sims will add her note at the end of mine.

I am doing all right in reading, spelling, composition, writing, geography, history, and hygiene. I think that I am better than most of the class in these things. I need to study arithmetic more, though. It is hard for me and I am not getting it very well. I have trouble with story problems like the ones on airplanes and automobiles.

I am above weight for my age and should reduce some. My height is about right.

With the exception of John, I get along all right with all the children. I don't like John because I saw him throw stones at a cat. He does not like me, either.

My teacher says that I should play outside more. I am reading too many books and I do not get out in the fresh air as much as I should.

I believe I need help in controlling my temper. When John teased me yesterday, I hit him with a book.

Your daughter,
Marilyn

Dear Mrs. Albert:

Marilyn has analyzed her strong and weak points very well. She is exceptionally good in reading and spelling. Her arithmetic is not as bad as she says it is. All the children had trouble in the beginning with the kind of problems she mentions.

I think Marilyn is right in saying that she should play more out of doors. She likes to read so well that she wants to stay in at recess with a book. Perhaps she reads too much at home, too. When she is developing so rapidly, physically, she should have plenty of exercise. Probably more play would reduce her excess weight, although this is not serious.

Some of the children are annoying at times and I cannot blame her too much for becoming angry with some of them.

Probably she should learn to control her temper better, though.

Marilyn is a very sweet child in school. She is always alert and attentive. She is helpful in keeping the room in order and in planning things to do.

Why don't you call on us when it is convenient for you? We would like to have you see the things we are doing, and it would be an inspiration to Marilyn, I am sure. We would be happy to have you come whenever you can.

Very truly yours,
(signed) *Gertrude Sims*

Another type of anecdotal report is the procedure developed by The Children's School, National College of Education, Evanston, Illinois.¹ This report makes an analysis under various headings from both the home room and the child's special teachers. Included also is the parent's analysis.

Sample 14

REPORT OF ROOM TEACHER

FOURTH GRADE

<i>Name of child:</i>	G.	<i>Group:</i>	Fourth Grade
<i>Date of birth:</i>	March 27, 1931	<i>Days absent:</i>	1
<i>Term beginning:</i>	Sept. 18, 1939	<i>Days present:</i>	85
<i>Term ending:</i>	January 31, 1940		

Physical and Emotional Status: — G. seems to be well physically. She has grown less tense and nervous since Christmas. There is better self-control and a happier, freer feeling apparently. She continues, however, to be a little secretive especially when there is something which she dislikes. She is very sensitive to beauty but would rather not show it, also likes praise but is self-conscious if complimented before the group.

Social Adjustment: — G. is making a marked effort to cooperate with the group, though she feels more at home with one or two chosen friends. She has unusual ability as a leader, and needs to be guided in offering the right sort of leadership. She is helpful whenever her own interests are not too greatly concerned. There is a lovable, sweet, sympathetic quality which we must try to bring more to the foreground.

Social Studies: — G. has been keenly interested in the studies of food and in pioneer life. She has a splendid mastery of the subject matter covered. She is very critical of others, and belittles her own accomplishments, which are usually very original and worth while. She takes much

¹ BAKER, C. B., and others. *Curriculum Records of The Children's School*. Evanston, Ill.: Bureau of Publications, National College of Education, 1940, pp. 540-550.

pride in the appearance of her work and is eager that it be the best. She has marked ability in starting new projects, in creating new situations without suggestions from others.

Science: — G. has an unusual interest in the beginnings of life in all forms, eagerly seeks the source and cause of everyday happenings. She has very keen appreciation of beauty in all forms.

Oral Composition: — G. shares her experiences, but is very timid about speaking before the group. She makes worthwhile contributions and is quite dramatic in her approach to any topic. She has a fine command of English, often using lovely descriptive phrases.

Written Composition and Spelling: — G. enjoys writing poems and stories, is often original in her ideas. She uses splendid sentence and paragraph structure as well as the simple marks of punctuation. Her work is usually neat and carefully done. She is well up to grade in spelling.

Reading: — Reading is one of her chief interests. She reads from any field: history, travel, fairy and folk tales. She finds it difficult to read expressively before the group because of a self-consciousness, but comprehends in a fine way material read silently.

Arithmetic: — There is a growing interest in arithmetic, which needs constant encouragement. When she can do the work with little real effort she enjoys it, but the other distaste for it noticed in the fall has nearly disappeared. She is able to make fine practical applications, but is handicapped by her lack of knowledge of the facts of the four fundamental processes.

Recommendations: — Would be well to encourage G. to finish her Third Grade Arithmetic Book, as it would help to give her the practice needed. Sympathy with firmness seems to yield a desired change in G's attitudes. There is much joy in her improvement.

REPORT OF SPECIAL TEACHERS

Art: — G's Christmas cards showed gain in not overcrowding one thing with too many ideas. I should like to see her gain more in control of herself, as her attitude toward her work and at times toward the group is satisfactory. She has ability and it should give her much happiness.

Manual Training: — Is doing quite well when working alone; needs a better understanding of cooperation. She has initiative but needs help in developing originality and appreciation of group contact.

Physical Education: — At the beginning of the school year, G. objected to playing in group activities; she would run off with a few others, developing an anti-social attitude. Now she seems to enjoy the group play. She has very good control and physical coordination.

Music: — There is no doubt as to G's ability in ear training or singing, nor as to her well-directed task, but she has not shown as much progress as we would like her to display. Her cliquishness has impeded her progress.

Creative Dancing: — Is in a transitory stage where she wishes to express through movements that are broad and heavy; so I miss the exquisite

creative work of last year. When not leading she is tempted to ridicule. I feel that G. has had too much attention.

French: — G's progress has been rather slow this semester; her attitude in class has been too playful at times. Her written work is good. More eagerness and more dependability are wanted.

REPORT OF PARENTS

Date: March 1, 1940

What school interests has your child most often mentioned at home?

G. has shown intense interest in the social studies at school. She has a thirst for historical information, and is getting to be quite an omnivorous reader along many lines. She appreciates any special program at school, such as Rose Fyleman's readings.

In what phases of our work is her progress most evident?

She seems to have grown up amazingly this year. One can almost talk to her as an adult. Her vocabulary is very wide, and she has a store of miscellaneous information. She has an eager interest in learning that I hope she will never lose. I can see progress all along the line, even in arithmetic, but most markedly in the social studies.

In what forms of work or play does she engage most frequently at home?

G. reads a great deal, draws incessantly, and is always making things. She is eager to be out-of-doors. She skates a good deal, and plays on our apparatus. She and her little friend play many imaginative games around horses. She collects odds and ends, and her pockets are as full as a boy's, all with some imaginative significance. She likes to memorize.

What, if any, changes have you noted: In attitude toward parents?

G's attitude toward her parents has improved.

In attitude toward other children?

G's attitude toward her younger brother is changing from one of hostility to one of indifference — which seems a step in the right direction! She seems too busy and interested in larger affairs to be able to concentrate on him as she has done during the fall and early winter. Her brothers form one unit and she another.

What is the attitude toward coming to school?

G. enjoys school extremely. She is always eager to go. Arithmetic is the only subject that seems difficult for her. I think that G. is a child who might easily dislike school, and it is most gratifying to us to have her enjoy it so thoroughly.

What, if any, undesirable tendencies is your child showing at home just now?

G. is careless of property. She tracks mud over the rugs, strews her belongings on the floor, and loses many things. She is not orderly, even in a rudimentary way. Her mind seems elsewhere.

She indulges often in lies and near lies. "Yes, I brushed my teeth," saves a trip upstairs. "Yes, I washed my hands. Well, at least I wet them." All for convenience. Does not as a rule welcome suggestions. She is jealous of her "free time" and her chances to do as she "pleases." Anything required outside of school she definitely resents. We stopped piano lessons

and a class in acrobatic and tap dancing because of the emotional difficulties involved. It has proved to be a wise move. There has been a noticeable lessening in tension. We have come to the conclusion that outside of school the least possible should be required of G. and that she should be left pretty much alone. After all, why not? What are a few extra skills as against a feeling of general "rightness" and ease? I wish G. would oftener do some spontaneous, generous, lovely thing. She seems to have her own interests and comfort well to the fore in her thinking and living.

THE CONFERENCE REPORT. Some schools, particularly experimental schools, of late have substituted parent-teacher conferences for any sort of written report. These have the advantages of informality and of being a more realistic and functional solution of children's problems.

The usual plan is to have all the conferences during the last two months of the year,¹ where promotion is on an annual basis. The parents of children having difficulty of any kind are, of course, consulted at frequent intervals. When the youngster is making normal progress, probably the once a year plan is frequent enough.

Generally the school is used for the conference because of the availability of records and pupils' work and because of its professional and businesslike atmosphere. If the parent cannot come to school, however, most certainly the teacher should go to the home.

Ordinarily, but one conference can be held a day, using an hour after the close of school. Invitation is by note, something like this:

Dear Mrs. McLain:

Toward the close of each school year we teachers like to talk individually with the mother of each child. We can then report on the progress that has been made, and on the strengths and weaknesses of the youngster's development. By coming for a conference you can help us with the adjustment of your child to school. We may be able to help you by passing on information that we have gathered.

Is it possible for you to come to school next Wednesday afternoon, April 26th, at 3:30? I shall be glad to meet you in my room, No. 320, at that time if you can come.

¹ This is not necessarily a trend. Many experimental schools have the conferences at any time through the year. The end of the year conference is associated with those schools where decisions on promotion are seriously considered.

Just send a note by Jack if this is convenient for you. If you can't come then, will you please suggest a date the first part of the following week?

Very truly yours,
(signed) *Hilda Feruson*

Careful preparation must be made for the conference if it is to be successful. The teacher should have notes of the things she wants to discuss with the parent or else vital issues will be forgotten. Both the notes and the conference should bring out good points as well as weak ones. No conference or communication should be entirely on the negative side. Tact and reasonableness are, of course, all-important. All personal feelings should be crowded into the background.

NOTES FOR A TEACHER-PARENT CONFERENCE

(All except the mother's contribution were prepared in advance.)

Marilyn Converse

A. Child's assets

1. Well liked by children, has many friends.
2. Very friendly, cheerful disposition.
3. Makes good contributions to discussions.
4. Has fairly good self-control.
5. Is self-reliant and dependable.
6. Respects rights and property of others.
7. Cares for materials.
8. Does her best.
9. Reads well.
10. Writes well.
11. Does well in art and music.
12. Making normal physical growth; a trifle overweight.

B. Improvements made

1. Accepting more responsibilities.
2. Showing more interest in initiating activities by herself.
3. Spends less time in merely watching others.
4. Growing more cooperative.
5. Growing in interests.
6. Giving better attention.
7. Doesn't bite her nails as much.
8. Has more persistence.

C. Needs to grow in

1. Developing greater self-confidence.
2. Becoming less sensitive.
3. Becoming less self-conscious.
4. Participating with the group.

D. Mother's contribution (made at time of conference)

There is a tendency to spoil her in the home. Will try to check it. Anxious to help child grow in self-confidence. Will try to spend time with her to give her a repertoire of stories so she will feel able to contribute to the story-telling period at school. Pleased at progress in reading, writing, accepting responsibilities, and cooperation. All that is important is the desirable development of the child.

Immediately after the conference, an account should be written of the topics discussed. This should be placed in the child's permanent folder to serve as a record of what transpired and as a guide to future teachers in relationship with the child and with the home.

Some schools have encouraged or required teachers to make regular calls at the homes of all their children. Sometimes calls are announced in advance and the invitation solicited. At other times the teacher has merely "dropped in."

At the present, the latter type of home call is being questioned. In foreign neighborhoods, there is often a language difficulty and an immediate feeling on the part of parents that the teacher is calling in the role of police-woman. Where the homes are poor in an economic sense, both parents and teachers are often embarrassed. Parents of a higher economic class are usually glad to see the teacher if they know she is coming but are not necessarily cordial if they are interrupted in the midst of some social activity.

Another argument advanced against unplanned calls is the fact that if the child is progressing normally in school, it is difficult to convince the parent that the call is made for the sole purpose of becoming acquainted.

Undoubtedly if regular calls on parents are to be made, an invitation should be sought so that the teacher will be expected. Perhaps a regular program of calling may be worth while if the school clientele is of the professional or business class; but even in this instance many educators believe it is better to have the parent visit the school if possible. In the case of the poorer environments a program of home visitation has greater limitations. Parents just don't seem to understand the purpose, and their defenses come up immediately.

In cases where the child is having serious difficulty, immediate contact with the home is practically mandatory. If the parents can't or won't come to school, then the teacher must of necessity go to them.

In small and medium-sized communities teachers have contacts with some parents at concerts, plays, bridge parties, and other social events. In such cases the question can well be raised, "Should such contacts be used to talk over problems of children?" The answer is, "No, unless the parents insist." If the mother or father opens the subject, and the teacher and parent are in comparative privacy, then a worthwhile conference can result. If the conversation has to take place in the presence of others, then its value may be low or even negative. One cannot say what he wants to say when other people are within hearing.

Some parents, possibly thoughtlessly, insist on talking about their children while at parties or other social or recreational affairs. Sometimes they merely state a number of personal frictions. The teacher is almost entirely defenseless in a situation of this sort. No matter how much she or the school in general is being assailed, she cannot find a satisfactory point of denial or explanation. Perhaps her only role is to squirm and keep on smiling.

IV. AN EVALUATION OF CURRENT TRENDS IN HOME REPORTING

As we illustrated in the previous section, many schools are giving thought to ways and means of improving home reports, and it is commendable that they should do so. As stated by Dr. Laura Zirbes:¹

There can be no doubt of the need for substitute procedures in the case of such problems as over-anxiety concerning marks, grades, and promotion. We have set up these modes of report. They are under criticism because they have diverted effort and attention from worthwhile ends. They are at the bottom of dishonesty to secure marks and to pass examinations, of subterfuges used to get by. The demoralizing effects of competition on the children who are most in need of encouragement

¹ZIRBES, LAURA. "The Emotional Climate of Schools." *Educational Method*, XIV: 171-173. Jan. 1, 1935.

and least able to compete fairly for marks and promotion are only part of this story. They have another bearing. During the very years in which children should be exposed to the congenial climate of social interaction and cooperative endeavor for the common good, they are systematically exposed to the rigors of competition, sorted into rankings and groupings, and regimented into mass action.

The increasing activity and interest in the improvement of home reports indicates that the point of view of Dr. Zirbes is beginning to be taken seriously.

Many modifications in reporting may be nothing more than the addition to the old system of a rating in citizenship and health traits. In some instances qualities such as cooperation, courtesy, and punctuality are added. A few schools include definitions and trait descriptions so that a common understanding between parent and teacher will be brought about.

As the type of report itself is being modified, so is the method employed in bringing about changes. The old procedure was to collect some copies of forms in use, make adaptations, or select part of one form to add to part of another. Sufficient ground-work and experimentation have now been done to enable the school to study the problem more objectively and with due regard to the larger problem of instructional aims. In other words, we have come to see that how we mark depends upon what the school is trying to do. From this point of view the majority of forms of reports can be recognized as transitional; as the school program changes, so does the system of home reporting.

Changes in home reporting should be evaluated in terms of progress rather than in terms of an ultimate standard or goal. Such techniques as the "Satisfactory — Unsatisfactory" and the efforts to mark citizenship should be regarded neither as perfect nor as inadequate and feeble but as transitory forms, steps in the right direction, though they are for some a giant's stride.

If the many forms in use today are only transitional, what further direction should the improvement of appraisal methods take? Two possible lines are implied in the following questions: First, does proper procedure involve going through

all the evolutionary stages in order to arrive at the stage which best meets the needs of school and community? Second, should not the proper procedure be to introduce gradually, through the lower grades, the plan considered most effective, thus skipping several of the in-between stages? Since needs of schools and communities differ, it is impossible to provide an answer that will be suitable for all localities.

The evolutionary method of development implies, for example, changing from a percentage or a letter system to one which qualifies achievement according to effort or possibly a marking of "Satisfactory" or "Unsatisfactory." When this method has been fully explored or when certain changes have been brought about in the school program, a second step is necessary.

The difficulty with the step by step development is that for each move a new public relations program has to be developed for securing public approval. To initiate and execute such programs is more difficult than to determine the type of report which seems desirable at the time. School patrons can be educated to new needs but they will learn to distrust constant change.

One way out of the difficulty that has been found helpful has been to provide for the introduction of a new, comprehensive, fully adequate system of reporting in certain grades only in the school. Getting it accepted by small groups of parents is more simple than getting approval of all groups of parents at one time. In this plan the new system is used in only a few grades while the old is continued in others. The argument in favor is that slow introduction, one grade at a time, allows for an intensive public relations program with a limited number of parents. Changes discovered necessary through use with one group of children can easily be made and details of the new plan can be modified for the next group without any real difficulty. Teachers objecting to such a slow introduction too frequently fail to realize the hold that an old plan has upon the public. The delay of a few years in obtaining complete working of the new plan does not imply snail's progress, because the time of introduction is geared to the time needed for experimentation and for public approval.

V. IN CONCLUSION: SOME REQUISITES OF THE IDEAL PLAN

Before any plan can be adopted which is compatible with the principles and ideals of growth and development, it is essential that the complex of "success versus failure" in appraisal be rooted out.

In the new scheme of things a marking system must include evidences of all aspects of growth which lend themselves to appraisal. From this point of view those schools that have done away with appraisal records entirely have made but little contribution to the solution of the problem. To state the idea simply, it is sound to say that if marks are to be eliminated, something must be put in their place. Schools that abandon the problem because it is too complex fail to recognize the implications in the idea that learning takes place in many areas, at many times, and in many strange places. Schools which ask for parent appraisal to complement their own, are fully cognizant of this idea.

How comprehensive should be the form of appraisal? The answer is simple. The appraisal should be as comprehensive as the total instructional offering. If the school is interested only in the subject-matter achievement, then a simple form is sufficient. If the school is interested in all aspects of growth in broad fields, then the appraisal becomes more complex. The ideal system, therefore, records evidence of growth in those outcomes which are held to be important. To collect evidence of such growth is not an easy task. In all instances the many evaluative devices already described need to be employed. Standardized tests to be used in obtaining information on individual children as they progress from grade to grade definitely have a place in an appraisal program, and so do check lists, ranking methods, and incidental records of behavior.

SELECTED REFERENCES

1. BAKER, C. B., and others. *Curriculum Records of The Children's School*. Evanston, Ill.: Bureau of Publications, National College of Education, 1940.
2. KELLER, J. A. *Procedures in Large Unit Teaching* (Curriculum Bulletin No. 4). Montgomery, Ala.: State Department of Education, 1937.

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